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ABSTRACT

This document evaluates data and opinion concerning medical education presented to the Coordinating Board and proposes recommendations to the legislature for enlarging medical opportunities in the state during the next decade. The bulk of the report contains appended reports, proposals, statistics, and discussions. Source material includes articles from professional medical journals, reports, evaluations, enrollment projections, feasibility studies, city proposals, medical education plans of other states, papers, statements, fact sheets from the American Medical Association and the Texas Medical Association, reports of visits to medical schools, medical centers, hospitals, university facilities, clinics, and special consultations with interested groups, individuals, and out of state experts. (NF)

ED038111

A Proposal for the Development of Medical Education in Texas, 1969-1980

Adopted: December 3, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION
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FOREWORD

This document evaluates data and opinion concerning medical education presented to the Coordinating Board since October, 1966, and makes recommendations for enlarging medical education opportunities in the state during the next decade.

Materials used by the Coordinating Board in preparing this paper include articles from professional medical education journals; eleven volumes of reports, evaluations, and enrollment projections from medical units of The University of Texas System; feasibility studies and proposals from the cities of Amarillo, Austin, Houston, Lubbock, and Temple; medical education plans of various other states; papers from the 1967 American Medical Association Congress on Medical Education; the 1968 *Fact Sheet on Medical Education* by the American Medical Association; 1966, 1967, and 1968 Texas Medical Association statements on medical education facilities in Texas; the joint statement of the American Medical Association and the American Association of Medical Schools on medical school expansion; the 1965 Coggeshall report, *Medical Education and Coordination*; and a *Report to Coordinating Board, Texas College and University System* by Drs. Lee Powers, W. R. Berryhill, and Reginald H. Fitz.

Members of the Coordinating Board's special committee on medical education and the Board's staff have visited each of the medical schools in the state, the Texas Medical Center in Houston, hospital and university facilities in Lubbock, the Scott and White Clinic in Temple, the medical center in Amarillo, and the medical school and medical center site in San Antonio.

Members of the Coordinating Board's special committee on medical education held several meetings in Austin and elsewhere with interested groups and individuals. The Board's staff and several members of the special committee consulted in Austin with educators from the Texas medical schools, public and private, and with six out-of-state consultants—Dr. Kenneth Penrod of Indiana, Dr. Robert Berson of Washington, D.C., Dr. Joseph Volker of Alabama, Dr. Lee Powers of Illinois, Dr. R. H. Fitz of New Mexico, and Dr. W. R. Berryhill of North Carolina. The latter three consultants agreed to undertake a study of Texas medical education problems for the committee. That study is Appendix A to this policy paper.

A public hearing was held on the subcommittee reports in Austin on November 11, 1968. The recommendations beginning on page 9 were approved by the Coordinating Board on December 3, 1968. A minority report is included on pages 57 through 76 of this policy paper.

BEVINGTON REED
Commissioner

COORDINATING BOARD: JOHN E. GRAY, *Chairman;* NEWTON GRESHAM, *Vice-Chairman;* RAYBURN BELL, G. V. BRINDLEY, JR., M.D., VICTOR BROOKS, J. G. CIGARROA, JR., M.D., MRS. JOHN T. JONES, JR., EUGENE MCDERMOTT, CHARLES PROTHRO, HARRY PROVENCE, C. G. SCRUGGS, J. J. SEABROOK, TOM SEALY, M. HARVEY WEIL, D. M. WIGGINS, DAN C. WILLIAMS, H. B. ZACHRY.

A PROPOSAL FOR THE DEVELOPMENT OF MEDICAL EDUCATION IN TEXAS, 1969–1980

I

Medical Education in the United States

Formal medical education in the United States began in 1785 with the establishment of the first chair of medicine at the University of Pennsylvania. Other university-related medical education programs were soon established at Harvard, Columbia, and Dartmouth. From the beginning, the central role of the hospital in the teaching of medicine was established, and joint hospital-university affiliations were developed. These have since characterized traditional medical education.

During the 19th century, proprietary schools of medicine without quality controls appeared in large numbers. The result was the production of many poorly trained physicians, and this led in 1910 to the famous Flexner report, which established medical school standards. In 1910, there were 160 medical schools; by 1930, this number had decreased to 76. Currently there are 94 medical schools in the United States, with 10 additional ones scheduled to accept students in or before 1971.

Virtually all medical schools in the United States are the four-year "free standing" type. This pattern of medical education is favored by the majority of medical educators, with the result that only Dartmouth and the two Dakotas have two-year schools.[1]

Total enrollment in United States medical schools rose in 1967 to 33,423, representing an increase of 588 over 1966. The 1967 enrollment in Texas medical schools was 1,411.

Ten states enrolled 66 per cent of all *entering* medical students in 1966. Texas was eighth, with a first-year total of 394. Despite this position, Texas has only 3.2 first-year medical students per 100,000 population and in this important ratio ranks 42nd among the 50 states.

The number of graduates from United States medical schools in 1967 was 7,743. For Texas schools the figure was 325. Medical school growth in this regard had been distressingly slow in the state. Texas medical schools had 307 graduates in 1960, 303 graduates in 1962, and 332 in 1965.

The creeping growth represented by these figures is not restricted to Texas but is nationwide. In 10 years, for example, the number of physicians graduating from medical schools has increased by less than 1,000, and 32 of the nation's 94 medical schools graduated the same number or fewer physicians in 1967 than they did in 1957. Baylor University College of Medicine is an illustration. In 1957, Baylor graduated 90 MD's; in 1967 this Houston-based school graduated only 79.

The 10-percent increase nationally in the number of physicians graduated since 1957 is inadequate to meet the needs of the American people. Furthermore, costs of medical schools have reached a point where serious questions must be asked about the purpose and nature of medical education. During a decade when the number of graduates from medical schools has increased only 10.4 percent, the number of full-time faculty has increased 65.7 percent and total expenditures 176.5 percent. On the latter point, the ratio of graduates to total medical school expenditures in 1957 was 1 to $46,505. This ratio in 1967 was 1 to $116,475.[2]

II

Medical Education in Texas

The work of the Coordinating Board, its special committee on medical education, and its staff has been in response to a clear mandate occasioned by a shortage of physicians in this state. This shortage exists now and is increasing.

Data in the hands of the Board, and comments from consultants to its special committee on medical education, make clear the increasing severity of the shortage. The following excerpts from reports of the Texas Medical Association for 1966, 1967, and 1968 further describe the acuteness of the problem:

From the TMA 1966 Statement:

> 1. *Texas Population.* In 1950, the population of Texas was 6,711,194. By 1960, it had increased to 9,579,677. The population of the State now is listed as 10,700,000. Texas has the sixth largest population of all states in the nation.
>
> Population projections show that Texas will have an estimated population of 12,134,688 in 1970, and Texas

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[1] The Coordinating Board minority report on medical education points out that this may change, however. In Indiana there is underway an experimental approach to medical education involving geographic separation of the preclinical and clinical years of study, and the Illinois Board of Higher Education has just proposed a similar plan for that state.

[2] See *Fact Sheet on Physician Population and Medical Education in the U. S.*, American Medical Association, Chicago, 1968, pp. 9–11.

will pass Illinois, Pennsylvania, and Ohio to become the nation's third largest state.

2. *Number of Physicians.* There are 11,213 physicians in Texas. Of that number, 10,730 actively are practicing their profession in different ways such as private practice, teaching, in-training, and administrative medicine.

Physician growth is reflected in the membership rolls of the Texas Medical Association. Membership in the Association represents 89 percent of the active physician population of the State. The majority of non-members are interns and residents who are not licensed in Texas, fellows, and some physicians who are in the armed forces, and some who are associated with Veterans Administration hospitals and medical schools.

The membership of the Texas Medical Association numbered 6,191 in 1950. By 1960, it had increased to 8,206. By the end of 1965, the membership numbered 9,564. Membership is increasing at a relatively vigorous pace of approximately 270 net per year. On the basis of the present rate of growth, it is anticipated that Association membership will exceed 10,000 at the end of 1967. Membership should exceed 11,000 by 1971, and 12,000 by 1975.

3. *Physician-Population Ratios.* At the end of 1965, the physician population in the United States was 292,088, or one for every 681 persons, based upon Census Bureau estimates of the civilian population. This compares with 252,984 physicians in the U. S. in 1960, or one for every 737 persons.

Texas' physician-population ratio is considerably higher than that of the United States, and is appreciably higher than the Eastern and Northern states. At the present time, Texas has a ratio of one physician for every 854 people. The State's greatest need is for more physicians in West Texas where the ratio of physicians to population is 1 to 1,366 people.

From the TMA 1967 Statement:

Final tabulations of a special study have revealed that fewer than half of the physicians who are entering into the practice of medicine in this State have been educated and trained in Texas.

Only 45 percent of the physicians who have joined the Texas Medical Association since 1961 are natives of Texas. Forty-eight percent of the 2,518 new members of the Texas Medical Association from 1961–1966 have received their medical school training in this State. Thirty-five percent pursued internship training in Texas, and 38 percent took their residencies in the State.

Even smaller percentages of physicians who have joined the Texas Medical Association during the past two years are natives of and have been educated in this State. The survey revealed that only 39 percent of the physicians who joined the Association in 1965 and 1966 are natives of the State. Forty-three percent of the new physicians have received their doctor of medicine degrees from Texas schools, while 38 percent of them have pursued internship training at hospitals and institutions in this State.

The survey tabulation for the years 1961–66 are as follows:

Native Texas Physicians		1,129
Medical Education in Texas	969	
Internship in Texas	661	
Residency in Texas	528	
Non-Native Texas Physicians		1,389
Medical Education in Texas	244	
Internship in Texas	288	
Residency in Texas	429	
Total New Members of TMA Since 1961		2,518

No argument can be offered that the need for additional physicians in the years ahead is not real. Statements concerning the ratio of physicians to population, however, must be related not to the State as a whole but to the cities and counties individually.

From the TMA 1968 Statement:

The continuing shortage of physicians and the rapid projected growth of the general population in Texas signals a professional manpower crisis within a few years unless positive measures are undertaken immediately.

The Council on Medical Education and Hospitals calls for the Texas Medical Association to lend its full support to the expansion of medical education facilities in Texas. To meet the growing need for more physicians, the Council urges the expansion of existing medical schools as well as the construction of new facilities. The Council strongly recommends that a new four-year medical school be approved this year, and that consideration should be given to the need for a second new school.

The ratio of physicians to patients in Texas is ever widening. The state's population is expected to reach 11,900,000 by 1975. Recent surveys show that there is one MD in Texas for every 997 persons, compared to a United States physician-population ratio of one physician for every 660 individuals. There especially is a vital need for more general practitioners, more physicians who practice family medicine, and for more physicians who practice in non-urban areas.

Furthermore, the deans of Texas medical schools report that the number of qualified applicants who did not gain admission this year would fill the entering classes of several new medical schools.

A study completed last year showed that Texas is providing less than half of its own recent medical manpower. Only 45 percent of the physicians who have joined the Texas Medical Association since 1961 are natives of Texas, according to the study conducted by the Texas Medical Association and submitted to the Coordinating Board of the Texas College and University System. Fifty-two percent of this same group received their medical school training outside the state.

> Other factors which portend even greater medical problems than imagined a few years ago are the demand by the public for a greater amount of medical care and the recent establishment of many new programs, such as Medicare and Medicaid, which provide financing of medical services.

These statements are supported by other professional data and opinion.[3] The Coordinating Board committee concluded that[4] the evidence is unequivocal that Texas must move with deliberate speed, and in accord with long-range planning, to increase its capability to train physicians.

Ratio of graduates to total medical school expenditures for medical education in Texas are not available because the Coordinating Board does not have figures for the Baylor University College of Medicine and because the costs of operating teaching hospitals are not included in Texas totals. The total of budgeted expenditures for state-supported medical education in Texas during fiscal year 1968 (excluding the dental school, M. D. Anderson Hospital and Tumor Institute, the nursing school, and the school of public health) was $19,537,271. On a per-MD graduate basis, this represents a ratio of about 1 to $79,000.[5]

About 62 percent of funds appropriated to the Texas medical schools are for general administration and faculty salaries, and 27 percent are for library and other instructional costs. The average budgeted faculty salary is about $16,000. Salary ranges (faculty and administration) are from $6,000 to $42,500 (instructor to executive vice-chancellor for health affairs).

Table I shows the relationship of appropriated expenditures to students and faculty in the three medical units of The University of Texas System.

III

Coordinating Board Activities Relating to Medical Education

In September, 1966, the Coordinating Board began review of a multi-volume study on Texas medical ed-

TABLE I

EXPENDITURES FOR MEDICAL EDUCATION AND NUMBERS OF STUDENTS AND FACULTY
Three Medical Schools of The University of Texas System
1966–1968

		Appropriated 1966	Appropriated 1967	Appropriated 1968
Medical Branch, Galveston:				
Expenditures for Educational Unit		$4,608,104	$5,268,945	$6,431,410
Numbers of Students:	Undergraduate Medical	563	586	586
	Graduate Medical (Basic Science)	47	60	65
	Medical Services Students	52	62	63
	Nursing	114	147	194
Numbers of Faculty Positions (School of Medicine)		152.9	183.3	201.6
Student-Teacher Ratio (School of Medicine)		4.0–1	3.5–1	3.2–1
Southwestern Medical School, Dallas:				
Expenditures for Educational Unit		$3,787,698	$4,564,295	$5,188,977
Numbers of Students:	Undergraduate Medical	380	393	407
	Graduate Medical (Basic Science)	39	47	59
Numbers of Faculty Positions		129.4	136.1	146.8
Student-Teacher Ratio		3.3–1	3.2–1	3.2–1
Medical School, San Antonio				
Expenditures for Educational Unit		$ 290,008	$1,378,746	$3,671,455
Numbers of Students:	Undergraduate Medical	–0–	15	47
	Graduate Medical	–0–	–0–	–0–
Numbers of Faculty Positions		3.9	37.5	64.0
Student-Teacher Ratio			.4–1	.73–1

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[3] See Appendix C.

[4] The minority report deletes the six words at the beginning of this sentence.

[5] See Appendix C for Texas public medical school appropriations and appropriations requests for recent fiscal years.

ucation prepared under the direction of Dr. Charles LeMaistre, University of Texas System Executive Vice Chancellor for Health Affairs.[6] The Board concluded that the LeMaistre study, while of immense value, was not a comprehensive long-range report but a status document with projections, prepared by the deans and faculties of the existing Texas state-supported medical and dental school complexes. Acting on this conclusion, and supported by the advice of out-of-state consultants, the Commissioner of Higher Education recommended and the Board adopted on December 12, 1966, the following statement:

> Recommendation of this Board is being sought on the question of whether a new state-supported school of medicine should be authorized at this time. Information received and reviewed by the Board's staff indicates (1) that a scheduled expansion of the size of entering classes in existing medical schools should be indeed undertaken now and that cost figures for this expansion should be sought at once from The University of Texas Medical Division; and (2) that the Board should now sponsor a concentrated comprehensive study of the needs for medical education in Texas, this study to be based on and to supplement the reports and studies filed with the Board in recent months by The University of Texas medical units. I recommend that the Board favor an appropriation of funds to expand the size of entering classes in existing medical schools (hopefully by a total of 100 students) and that the Board favor an appropriation for the purpose of intensive study of the medical needs in Texas. Qualified professionals should be employed to undertake this investigation; the investigation should consider not only the needs for additional medical schools but their location and dates for their implementation and the merits of four-year medical educational programs versus two-year schools and other arrangements. The report of this investigation group, with its recommended courses of action, should be presented to this Board as soon as possible, and in no case later than July 15, 1968.

At a special public hearing before the Coordinating Board on March 19, 1967, the chairman of the Board of Regents of The University of Texas System, together with the System's Executive Vice Chancellor for Health Affairs, all medical deans of The University of Texas medical schools, and various other interested persons appealed to the Board to reverse its December decision in order to permit The University of Texas System to proceed to plan and establish a new four-year medical school in the Texas Medical Center in Houston. The central arguments in favor of an alteration of Coordinating Board policy were:

1. Texas production of MD's falls far short of present and projected needs, based upon analyses of physician/population ratios.
2. Continuing difficulties encountered in establishing the Medical School at San Antonio made it impossible to operate that school at its projected full student capacity for a number of years.
3. The proffer of special access to additional teaching hospital facilities in the Texas Medical Center, as well as the pledge of local support in the acquisition of prime real estate in or near the center, indicated a need for prompt action.

The Coordinating Board staff was then requested by the Board to restudy the matter of medical and other health-related educational needs. This the staff proceeded to do, recommending the following as an interim solution to meet an immediate need:

1) That an extension of The University of Texas Medical Branch in Galveston be authorized for location in the Houston Texas Medical Center, this extension to conduct its activity not as a "free standing" four-year unit but as a clearly related component of the Medical Branch at Galveston, designed to enable the Galveston school to expand its own operation, especially for the clinical years.

2) That The University of Texas be requested to prepare in detail a program of expansion of all its medical schools.

3) That the Legislature of Texas be requested to fund the Coordinating Board so that it might undertake a comprehensive study of health education needs in Texas for the forthcoming two decades.

These recommendations were modified by the special Board committee, and on April 3, 1967, the Board adopted the committee report by a vote of 12 to 5. The report carried these recommendations:

Coordinating Board Special Committee Recommendations on Medical Education

> As a result of its study, and in response to a clear and immediate need for more physicians in Texas, the Committee recommends:
>
> (1) That The University of Texas Medical School at San Antonio, into which so heavy an investment has already been made, be operated at an entering student capacity of 100 as soon as possible. We urge that the parties to the San Antonio Medical School problem take whatever steps are necessary to achieve the goal of full student enrollment, and to achieve it promptly.

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[6] A summary of the recommendations of the LeMaistre study is included as Appendix B.

(2) That a new four-year State-supported medical school be authorized for establishment in Houston, under the administration of The University of Texas; that the clinical facilities of this new school be made available to the Medical Branch in Galveston and to The University of Texas Medical School in San Antonio, if needed; and that The University of Texas request from the 60th Legislature of Texas a special appropriation of funds sufficient to undertake necessary planning, site acquisition and architectural work.

(3) That the new University of Texas Medical School in Houston coordinate its activities with those of the University of Houston in order that the latter school can provide required subsidiary education offerings in such fields as engineering, the physical sciences, the humanities, and the social and behavioral sciences.

(4) That The University of Texas be requested to prepare in detail for the Coordinating Board, by or before September 1, 1967, a current and long-range program of expansion of all its medical schools and health-related educational components.

In concluding its report, the Board's Committee notes that its study of medical education needs for Texas is continuing and that the recommendations made herein are intended only as partial answers to the total problem.

The Committee envisions for Texas medical education facilities which will be developed on a regional basis. Major regions will be Galveston-Houston, Dallas-Fort Worth, Austin-San Antonio, and West Texas, with Texas Technological College serving as the university base and with clinical facilities being utilized as they are built and staffed in appropriate cities.

The Committee stresses the desirability, and, indeed, the necessity of complete cooperation between the new medical school in Houston and the Baylor University College of Medicine located in that city.

This April 3 statement, with recommendations,[7] was forwarded to the Governor and the Legislature for consideration. Such consideration was complicated by the fact that five different bills to establish medical schools were introduced, and a sixth city-county delegation indicated its intent to introduce such a bill.

The result was that the House of Representatives quickly passed a bill which would have established a new four-year state-supported medical school in Houston, but the Senate allowed this and other medical education bills to die in committee.

The Coordinating Board, once the legislative session had concluded, requested the Board's special committee to proceed with study of medical education as a part of state long-range higher education planning.

The special committee on medical education continued its work and submitted its report and recommendations to a meeting of the Coordinating Board on September 16, 1968, for study and review. A public hearing was held on the recommendations November 11, 1968. Following that hearing, the Board's special committee presented its final report and recommendations to the Board on December 3, 1968.

IV

Coordinating Board Recommendations on Medical Education

The following report and recommendations were adopted by a majority of the Coordinating Board[8] on December 3, 1968:

In consideration of the evidence before it and as a result of the presentations made to the Coordinating Board at its November 11 public hearing, the Board respectfully submits these recommendations on medical education to the Governor and the Legislature:

1. *Entering enrollments in the existing public medical schools of The University of Texas should be steadily increased. Planning, to include all requirements for such increases, should be undertaken at once.*

The Executive Vice Chancellor for Health Affairs for The University of Texas System has indicated to this Board that enrollments at the three existing medical schools in the system can be increased to 200 first-year medical school students per unit by 1980. In the opinion of the Board, such expansion should be encouraged and the necessary financial support be made available by the state so that a minimum enrollment total of no fewer than 565 entering students will have been reached in these three medical schools by 1980.

Such an expansion should not make enrollments of existing schools unduly large provided adequate support is available. Enrollments and projected enrollments of entering students in respected medical schools in other states are stated at 200 or more. According to our consultants, expansion of the existing schools from 319 entering students in 1968, to no fewer than 565 in 1980, should produce additional physicians in approximately one-half the time and at much less the cost required to gain this increase through the establishment of new schools. The achievement of this expansion in the next decade seems possible, provided planning to that end is begun immediately and adequate financial support is made available.

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[7] Text of a minority statement of six members of the Coordinating Board (5 present and 1 absent) appears beginning on page 59.

[8] Recommendations of the minority report are on pages 64–69.

The Coordinating Board particularly notes that the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC), in a joint statement issued March 5, 1968, urge enrollment increases nationally as a matter of highest priority. In the words of their statement, "Considering the time required to create new schools and to provide a student with a medical education, there is no alternative to . . . [increasing enrollment] in meeting our present emergency."

While consultants to the Board do not recommend specific increases, they do generally agree that expansion of enrollment is advisable.

2. *The Baylor University College of Medicine in Houston should be encouraged to implement its plan to double its entering class enrollment. The Baylor College of Medicine should be offered subsidization by the state for each bona fide Texas resident enrolled beginning in September, 1969, the amount of subsidization per student to approximate the average annual state tax support per student at the public medical schools. Assistance should be provided to the college to raise the capital funds necessary for construction of physical facilities to accommodate increased enrollments. The purpose of the subsidization is to increase enrollment of Texas resident medical students.*

Baylor College of Medicine leaders are prepared to undertake this expansion, which would provide the least expensive and most expeditious mechanism for increasing enrollment of Texas resident medical students in the Houston area. State financial assistance to a private educational institution has sufficient precedent in Texas to make public support for these educational services possible.

Cooperative action by the Baylor University College of Medicine during the next 12 years, together with expansion of the existing public medical campuses, would expand the entering enrollments of our existing Texas public and private medical schools by more than 75 percent. With such enlargement, the estimated ratio of entering medical students per 100,000 population would move from the current 3.2 to 6.2, a ratio change urgently needed in Texas.

Baylor is a well-established medical school of national reputation with a distinguished faculty and a student body drawn from the entire United States. The people of Texas would be well served if Baylor were assisted in its expansion by state subsidy of properly qualified Texas residents.

State assistance to Baylor's medical educational effort would not only increase student enrollments but would open a door to cooperative undertakings in research and in mutually-sponsored training and educational ventures.

3. *There should be established a new, four-year public school of medicine in the Texas Medical Center in Houston. The new school should be designed for eventual enrollment of 200 entering students and should be operated as part of The University of Texas System. The new medical school should coordinate its activities with those of existing institutions in the area in order that the latter can provide required subsidiary educational offerings in such fields as engineering, the physical sciences, the humanities, and the social and behavioral sciences.*

In 1966, more than 2,600 students were at the Texas Medical Center, being trained and educated in at least 30 different levels within the health care professions. The 20 units of the Center then had a capital investment of almost $93 million. The Center's payroll included 2,414 faculty personnel and 11,455 other employees. In 1966, the Center accepted 1,003 research grants, reported 2,972 hospital beds available, and handled 854,025 patients in all categories. With all this vast outlay in health care facilities, both publicly and privately supported, the state is unable to utilize it fully and will not be able to do so unless and until facilities, both public and private, are provided for a larger number of undergraduate medical students. The Coordinating Board is convinced that the resources of the Center and the Houston area can adequately support two schools of medicine—that of Baylor University and the new school. In a state with a critically low ratio of physicians to population, the establishment of a new medical school in the Texas Medical Center and the expansion and continued support of the Baylor College of Medicine are both important to the state.

4. *Recent action by The University of Texas Board of Regents to coordinate the activities of university health education units in the Houston-Galveston area is commendable. The Coordinating Board suggests that there should also be established a vigorous Coordinating Council for area health education affairs. This council should involve The University of Texas, the Texas Medical Center in Houston, the Baylor University College of Medicine, the University of Houston, Rice University, the Harris County Medical Society, and appropriate hospital authorities. The Coordinating Council for area health affairs should have no powers of control or coordination that impinge upon the powers and responsibilities presently allocated to the governing boards of the institutions and organizations involved.*

5. *The production of physicians should be accepted as the primary role of our medical schools and medically-related research and graduate work as secondary roles. Efforts to build on medical school campuses doctoral programs not obviously and directly associated with medical education, unless in the opinion of the Co-*

ordinating Board circumstances clearly dictate a departure, should be discouraged.

6. *The Coordinating Board recognizes the necessity for a medical school to serve the special needs of West Texas. The Coordinating Board therefore envisions an innovative medical school under the administrative control of Texas Technological College in Lubbock. Such a medical school could possibly be developed in partnership with the emerging medical center in Amarillo and with hospital authorities in Lubbock, Midland, and Odessa. The Board believes the institution could be designed for an annual complement of 100 entering students in the preclinical years on the Texas Technological College campus and that the four cities involved would provide clinical and post-graduate (internship and residency) levels of educational work for the new school. The Board recognizes that regional resources, both in academic programs at Texas Technological College and in clinical and post-graduate facilities in the cooperating communities, are not yet entirely adequate, but the Board, viewing the progress in that area of Texas, believes these can be developed so the authorization from the Legislature can be requested in 1969 and the school be instituted as soon as facilities and programs are judged to be adequate by the Coordinating Board and financing is provided by the Legislature.*

7. *Should the need for the establishment of another additional medical school develop in the future, that medical school, if authorized, could be an integral part of The University of Texas at Austin and could interweave its programs tightly with the University's comprehensive and nationally-famed graduate curricula.*

8. *Medical educators in all units should be encouraged to explore the possibilities for clinical and post-graduate educational capabilities available in Texas' distinguished medical centers such as those in El Paso, Temple, Tyler, and other cities. Where such opportunities exist, they should be maximally utilized for increasing the production of physicians and allied health personnel.*

9. *The Coordinating Board authorizes its staff to establish a permanent, formally-constituted advisory body to aid in continuous planning for dental and medical education and education in the health fields generally. Membership of this Committee should include representation from the Texas Medical Association, the Texas Dental Association, and other appropriate health professional organizations as well as from public and private colleges and universities involved in health education.*

Such an advisory body is necessary, and this advisory group should work with all health-related education. Continuous liaison must be provided for between the Coordinating Board staff and members of the health education professions. The complexity of programs, the clear public interest in health care, and the elements of controversy in health education proposals all argue for a professional, permanent advisory group, controlled by no single interest. The Committee should report its findings to the Coordinating Board.

10. *The Coordinating Board hereby adopts as a policy the recurrent updating of all long-range medical education development plans for each involved institution or system component, and for the state as a whole. This updating process shall occur at intervals not longer than five years.*

APPENDICES

APPENDIX A

Consultants' Report
to
Coordinating Board
Texas College and University System

I. *Introduction*

In submitting this report to the Coordinating Board, Texas College and University System, the consultant team wishes to express its appreciation to the Board and its Commissioner, Dr. Jack K. Williams, for the excellent cooperation and assistance provided in making all appropriate information readily available and facilitating the consultation in every way possible. In addition, the team wishes to express its appreciation to the administrative officers of the several institutions visited during the course of the consultation.

Having accepted the responsibility of consulting to the Coordinating Board on the development of medical education in Texas, the team regarded its first assignment to be the definition of its role and mission. This was accomplished to a considerable extent at a meeting with the Board's Subcommittee on Medical Education in Austin on January 9, 1968. This meeting was attended by Dr. G. V. Brindley, Jr., Mr. Victor Brooks, Mrs. John T. Jones, Commissioner Williams, Assistant Commissioner Cross and the three consultants. At the meeting, the history of the Coordinating Board and its deliberations concerning the development of medical education in Texas were reviewed, including the several proposals for expansion of existing facilities and development of new facilities in medical education that had been submitted. It was agreed that the consultant team would not undertake a fresh survey of existing and potential resources for medical education in Texas, but rather would make its recommendations on the basis of the considerable accumulation of data and information that was available from previous studies and reports. Accordingly, the team met again for one-half day on January 25, 1968, and at this meeting developed the following procedure:

1. The team would meet with as many of the Texas medical school deans, former and present, as were available at the AMA Congress on Medical Education in Chicago, February 13, 1968, to learn the specific institutional views as to future developments.

2. The team would visit the facilities at Galveston, Houston, and Dallas, prior to a second meeting with the Coordinating Board.

This plan was followed, and the team met with the following individuals during the Chicago meeting: Dr. Charles Sprague, Dr. Truman Blocker, Dr. Stanley Olson, Dr. James R. Schofield, and Dr. John Truslow. Visits were scheduled at Galveston and Houston March 4 and at Dallas on March 5 preceding a March 6 meeting with the Coordinating Board. Dr. Fitz was unable to participate in the Galveston-Houston visit but joined the team on March 5 in Dallas.

At the second meeting with the Board in Austin on March 6, the team presented in very broad form the conclusions reached as of that date. It was agreed that the team would submit a report in writing in the near future, with a target date of the first week in May, 1968.

II. *Resource Material*

The consultant team had access to the following documents made available through the Coordinating Board, Texas College and University System, and/or the University of Texas medical branches at Galveston and Dallas:

1. *The University of Texas Medical System Survey of the Current Status of the Effectiveness and Projections for the Coordinating Board, Texas College and University System.* Dated September 28, 1966, the report of a central committee chaired by Charles A. LeMaistre, MD.

2. *The University of Texas Medical Branch at Galveston, Past, Present and Future,* prepared under the direction of Truman G. Blocker, Jr., MD.

3. Background data, a new medical school in Houston.

4. *Medical School Feasibility Survey,* conducted for Lubbock Chamber of Commerce and Board of City Development by Booz, Allen, Hamilton, Inc.

5. *Austin, Texas, Logical Site of the Next State Medical School,* a report submitted by Richard F. Brown, Chairman of Citizens' Committee.

6. *Preliminary Master Plan* for development of the University of Texas Southwestern Medical School at Dallas.

12/13/14

7. *Initial Progress Report on the Curriculum Study,* prepared for the faculty of the School of Medicine, University of Texas Medical Branch.

8. Notes and summarization concerning proposals for additional state-supported medical schools prepared by the Coordinating Board, Texas College and University System.

9. *Medical Education Resume,* December 21, 1967, prepared by the Coordinating Board, Texas College and University System.

10. Copy of draft of a letter to the Trustees, President and members of the Faculty of Medicine, Baylor University, from J. R. Schofield, MD, Dean of Academic Affairs, containing an analysis of the current status of and a proposal of MD enrollment expansion of 100 percent in the College of Medicine.

11. Catalogues of the several health related components of the University of Texas System.

12. A copy of a monograph on medical education and coordination written by Mr. Victor Brooks.

III. *Medical Education, Specific Questions Posed by the Coordinating Board*

In its first meeting with the representatives of the Coordinating Board, Texas College and University System, the consultant team was asked to address itself to certain specific questions as follows:

1. *Does Texas Need Additional Medical Schools?* Consultants' response: The consultants agree that the evidence is unequivocal that Texas must increase its capability for training physicians, nurses, and allied health personnel. The more difficult questions concern how much to invest in the expansion of existing medical schools and their associated medical centers, and how much to invest in new schools and centers. As will become apparent in the recommendations, the consultant team feels strongly that though there is a need for both developments, the primary concern should be the ultimate quality of the proposed programs.

2. *What Are the Criteria for Locating Medical Schools and in What Priority Should the Criteria Be Listed?* Consultants' response: There are many successful models and probably no absolute criteria. In general, however, the consultants agree that of the medical schools established in the last thirty years, the most successful appear to be located on the campus of a major university and accessible to a major population concentration. The University of California Medical Center in Los Angeles and the University of Washington Medical Center in Seattle represent excellent examples of this combination. On the other hand, the schools at the University of Florida in Gainesville and the University of Kentucky in Lexington appear to be making good progress in spite of being located in relatively small cities. The university base appears to be important from the standpoint of recruiting and program flexibility. Indeed, in those instances where there is not a direct university connection, the medical school and the medical center move in the direction of becoming their own "Medical University." In any event it is absolutely essential that the financial base is secure and substantial.

3. *Is There Validity to the Thesis That There Is an Ideal Size for a Medical School Student Body? If So, What Is the Ideal Size?* Consultants' response: Any answer to this question would be a matter of opinion. Certainly some schools appear to be functioning very effectively with a class size of 200. Others at least equally prestigious have limited their classes to 80 or less. It is the opinion of the consultants that once a class size gets much over 100 students per class, the relationship between the students and faculty tends to become less wieldv and more impersonal.

4. *Is It Practical and Feasible to Have a Geographic Separation of the Preclinical and Clinical Years of Medical Education?* Consultants' response: This has been attempted but in general is considered to be inadvisable and a compromise. The history of such attempts has generally been that the two-year basic sciences component moves to the location of the last two or clinical years, i.e., the hospital center. The problems appear relative to continuity and flexibility within the medical school curriculum on the one hand, and on the other hand, a need on the part of the faculty to identify themselves as "medical school" faculty. The interaction between the so-called "basic scientist" and the academic clinician with basic science interests forms a vital and stimulating component of modern medical education. In this respect, it is of some interest to note that only three schools have survived as two-year schools of the basic medical sciences, and one of these is planning to move to a full four-year program, all other two-year schools now having become four-year schools.

5. *Is There Validity to the Concept That a Teaching Hospital Must Be Located in the Immediate Vicinity of a Medical School?* Consultants' response: Although this is not absolute, it is highly desirable. Moreover, it is highly desirable that the teaching hospital be a part of the medical school and responsive to the needs of medical education. Isolated hospitals lack the primary thrusts toward education and research which are inherent in the university medical school and hospital setting and are essential if students are indeed to learn the principles of medicine that will be effective tomorrow rather than yesterday's "facts" which may be out of date today.

6. *Is There Validity to the Concept That a Medical School Should Be Expected to Develop Into a Medical University With Full Doctoral Programs in Numerous Fields of Science?* Consultants' response: Certainly all the established schools of medicine have developed programs leading to the Ph.D. Degree in the basic medical science and are involved in training programs in the supporting technological fields. This is essential if the medical and health education system is to survive and grow. If the medical school is not located on a university campus, it will in all likelihood develop its own broad academic base in the social sciences and allied health fields. Medicine involves the application of medical science and all its technologies to the individual human being in the context of his environment. Since the human being is an extraordinarily complex unit with important social and cultural attributes, it is impossible to separate the study of medicine from humanistic and cultural values or the humanities and social sciences. Viewed in this light, it is not surprising that medical schools located on weak or less than comprehensive university campuses do not thrive, and those which are "free standing" medical schools unassociated with a university, or those remote from parent universities, tend to develop the appurtenances of a university at their own medical center complexes. Whether this concept should be extended to include undergraduate training programs in the disciplines fundamental to the health or life sciences is conjectural and is being explored in several leading institutions.

7. *Is There Validity to the Statement That a Large Clinical Population Should Be Immediately Available to the Medical Schools?* Consultants' response: There are many examples of successful schools which are not in a large population center. Certainly those in population centers are more readily accessible to patients, and the communities are more readily available for interaction with the medical school programs. On the other hand, the interrelationships with the practicing medical profession may be more complicated in heavily populated areas.

IV. *Summarizing Remarks*

The consultants have given careful consideration to the projections, prepared by the University of Texas Medical Systems Survey of the Current Status of the Effectiveness and Projections for the Coordinating Board, dated September 28, 1966, by the Central Committee, Charles A. LeMaistre, MD, Chairman, and to the several prospecti of locations for a new medical school in Texas. They have visited the existing medical education facilities at Galveston, Houston, and Dallas, and have discussed in depth the planning for future developments at each institution. In addition, the feasibility of increasing the Baylor Medical College enrollment as proposed by Dr. James R. Schofield, in conjunction with the University of Texas Medical Systems projections, was given most serious consideration.

The consultants regard as unequivocal the need to expand the state's capability in medical education and education in the allied health fields. In their recommendations the consultants wish to emphasize the absolute and essential importance of quality in every component of health-related education. No investment of funds, state or private, which does not emphasize quality in this area can be considered other than wasteful and ultimately damaging.

The consultants believe that improving the quality of education in the existing schools of the University of Texas Medical System should hold the highest priority before embarking on the initiation of additional schools. They are unanimous in their opinion that the progress of medical education in Texas has been inhibited by the fact that no school controls its major teaching hospital environment or is located on a comprehensive university campus.

Finally the consultants are hopeful that their recommendations will facilitate the optimal development of the existing institutions involved in health related education, will promote the growth and qualitative productivity of each, will damage none, and will stimulate new developments of exceptional merit and potential.

V. *Recommendations*

A. Existing Institutions

1. *Houston-Galveston Complex*—The consultants emphasize the extreme importance of coordinated, and if possible unified, planning for medical and health related education in the Houston-Galveston area. They recognize the difficulty in developing and implementing an effective planning structure which will include the University of Texas Medical Systems units in Houston and Galveston and the independent elements of the Texas Medical Center, in particular the Baylor University College of Medicine. Nevertheless, the consultants believe that this planning effort is imperative if the exceptional potential of the health related resources in the Houston-Galveston area is to realized and future developments in this complex are not to prove destructive and wasteful. The consultants' recommendations concerning the Houston-Galveston complex are contingent upon the establishment of such a coordinated planning device.

a. *University Medical Branch at Galveston.* The consultants have carefully reviewed the recommendations of The University of Texas Medical Systems Survey and a document entitled "The University of Texas Medical Branch at Galveston, Past, Present and Future" prepared under the direction of Truman G. Blocker, Jr. In addition, two of the consultants spent a half day at Galveston discussing the Galveston Branch development plans with Dr. Blocker. The consultants believe that the recommendations of the Survey and Dr. Blocker's plans are fundamentally sound with regard to the Galveston campus and its interrelationship with the Texas Medical Center. The consultants do, however, have some concern for the long range future of the school at Galveston, primarily in regard to the continuing availability of state referred patients in the Sealy Hospital, and question the advisability of increasing the entering class enrollment to 200 as proposed on page 26 of the Survey report. The consultants feel that a flexible approach in planning is mandatory in order to accommodate as yet largely unpredictable factors such as the impact of federal health support programs on hospital utilization, changes in rates of population movements, etc. The consultants further believe that the basic financial support for The University of Texas Medical Branch at Galveston must be substantially increased if the quality of the program at that institution is to be established at a level that justifies any expansion.

b. *Texas Medical Center and University of Texas at Houston.* The Texas Medical Center is a powerful complex, the development of which was initiated by the movement of Baylor Medical College from Dallas to Houston in 1943. Amongst its elements, The University of Texas Dental Branch, The University of Texas M. D. Anderson Hospital and Tumor Institute, The University of Texas School of Public Health, and The University of Texas Graduate School of Biomedical Science all are primary units within The University of Texas Medical System. The expansion capabilities of the M. D. Anderson Hospital and the availability of the Hermann Hospital as a potential major teaching hospital provide an adequate base for the clinical teaching of some third and fourth year students of the Galveston Branch. It should be recognized, however, that special or categorical hospitals cannot be in themselves an effective primary base for teaching medical students and that a controllable general hospital of appropriate size is a requirement. With the extension of the activity of The University of Texas Medical Branch at Galveston to the Houston area, it is imperative that a University Hospital relationship be assured in Houston and that immediate steps be initiated to achieve this. Any increase in enrollment would intensify the importance of this measure. The consultants note that the Hermann Hospital has indicated its interest in developing such a role and recommend that this possibility be actively explored.

c. *Baylor University Medical College.* The consultants recommend that the Baylor University Medical College be encouraged to increase its entering class enrollment, and concomitantly that the College be subsidized by the state for each bona fide Texas resident enrolled in an amount approximating the basic institutional cost per student per year. The consultants also recommend that all possible assistance be provided to the College to raise the capital funds necessary for construction of the physical facility to contain the additional entering medical students. This proposal is a modification of the proposal introduced by Dr. James R. Schofield, Dean of Academic Affairs at Baylor University Medical College. The consultants believe that its implementation would provide the least expensive and most rapidly achieved mechanism for increasing the enrollment of Texas resident medical students in medical education programs of good quality. The consultants believe that if this approach can be implemented, the specific number of new student places should be determined after consideration by the unified planning organization referred to above.

The consultants further recommend that the faculties of The University of Texas Medical System units in Galveston and Houston give serious consideration to the development of a joint effort in coordination with the Baylor Medical College whereby selected students from each institution may have the opportunity to participate in a mutually sponsored program in which selected hospitals in the Houston area are utilized for teaching clinical medicine with a primary emphasis on the modern concepts of "Family Medicine." This recommendation is an extension of a proposal also introduced by Dr. Schofield.

The consultants recognize that if these recommendations can be implemented, they will require intensive planning and a genuine and exceptional willingness to cooperate on the part of institutional governing bodies and faculties. Nevertheless, if this amalgamation of the interests of publicly and privately supported institutions were accomplished, it would provide a unique example of cooperation and an opportunity to maximize the productivity of the health related resources in the Houston area which unquestionably have an extraordinary potential.

2. *The University of Texas Southwestern Medical School, Dallas.* The consultants strongly endorse the projected expansion of The University of Texas Southwestern Medical School as proposed by Dr. Sprague and his associates. The establishment of a Life Science campus at The University of Texas at Dallas, with appropriate interrelationships with higher educational institutions in the area, provides an exciting opportunity for the development of a truly outstanding institution with excellent and comprehensive programs in education, research and service in the

health fields. The conslutants wish to emphasize the urgent importance of establishing the Parkland Memorial Hospital as a University Hospital if this program is to succeed; financing and constructing an entirely new University Hospital would be a feasible alternative and may prove necessary in the future.

3. *University of Texas South Texas Medical School, San Antonio.* The consultant team did not make a specific visit to the South Texas Medical School at San Antonio. One member, Dr. Reginald Fitz, had had the opportunity to visit San Antonio late in 1967 and at that time visited the new medical school site with Dr. Pannill and discussed the planned developments. The projected enrollments and total development plans appear sound. The team believes that the Regents and the Coordinating Board should give serious consideration to expanding the University base in San Antonio at the appropriate time. The team again wishes to point out the problems inherent in attempting to conduct a program in medical education in a hospital environment which is not controlled by the university and fully responsive to the needs of the teaching program. Consideration should be given to transferring the management responsibility for the Bexar District Hospital unit to The University of Texas System and South Texas Medical School as soon as feasible.

B. New Developments

The consultants believe that the enrollment increases proposed by the existing institutions of The University of Texas Medical System schools, particularly if augmented to include increasing the enrollment of Texas students at Baylor with its potential of rapid accomplishment, would provide spaces in medicine for qualified Texans who wish to enter medical schools in the state for a reasonable number of years. Data from the Association of American Medical Colleges indicate that relatively few well-qualified Texas resident applicants are denied admission to medical school. Too rapid expansion of the total system would produce an unacceptable deterioration in quality. Based on information available at present, the consultants have the following recommendations concerning sites which have been proposed for new schools.

1. *Austin*—The consultants recommend that The University of Texas at Austin be given prime consideration as a site for a new medical school complex. The advantages of the location of a medical school on a strong university campus are undeniable. The university campus location is attractive to both students and faculty. Combinations of programs, both in teaching and research, amongst the several colleges on the university campus can be accommodated with considerable flexibility. Early enrollment of selected college students in medical school can be accomplished. Doctoral programs are enriched. An on-campus medical school offers an important resource to the university student health facility. If it is to be successful, its primary teaching hospital must be clearly identified as a University Hospital whose medical service responsibilities relate primarily and directly to the teaching and research programs of the university rather than to community health service needs. Inasmuch as Texas has not as of this date established a medical school on a university campus, and inasmuch as The University of Texas at Austin is by far the strongest comprehensive university base in the state, the concept of the Austin site has unique qualitative advantages.

2. *Galveston-Houston*—The consultants do not agree with the recommendations of The University of Texas Medical Systems Survey regarding the establishment of a new medical school in Houston at this time. They recommend that a definitive decision concerning this step be postponed and the proposal reevaluated in five years. The impact of a new school in Houston on the Baylor Medical College developments and the proposed developments of The University of Texas Medical Branches at Galveston, Dallas, and San Antonio could then be better assessed without having seriously impeded the development of the state's total medical education resources.

3. *Lubbock*—The consultants reviewed the medical school feasibility study conducted for the Lubbock Chamber of Commerce and Board of City Development by Booz, Allen and Hamilton, Inc., Chicago, Illinois, presented in July, 1966. The consultants agree with the primary conclusion of the report that a Texas Technological College Medical School in Lubbock is feasible. Moreover, the consultants recognize the logic of assigning Lubbock as the site for a future medical school on the basis of geographic considerations within the state of Texas. The consultants believe, however, that a definitive consideration of the development of a new medical school in Lubbock should be postponed for several years. Texas Technological College has not yet achieved the broad and comprehensive university status which is deemed optimal for the establishment of a medical school. It has not yet developed strong doctoral programs in the fundamental sciences, and the consultants believe that it would be difficult to attract a medical school faculty of a first order quality until the Technological College has achieved additional dimensions and status as a university.

4. *Other proposed sites*—The consultants did not attempt to make a definitive evaluation of proposals for the location of a medical school at Amarillo, Temple or El

Paso on the basis that sufficient details concerning these proposals were not available.

5. The consultants strongly urge a recurrent updating of all long range medical education development plans for each involved institution or system component, and for the state as a whole. This updating process should occur at intervals not longer than five years.

Submitted by:
LEE POWERS, M.D.
W. R. BERRYHILL, M.D.
REGINALD H. FITZ, M.D.

APPENDIX B

Summary of Recommendations in the LeMaistre Report

New Institutions and Locations Thereof

1. That a school of environmental health be developed in Houston; and that departments of environmental health be developed elsewhere in The University of Texas medical education complex.
2. That construction of one new medical school be begun as soon as possible and study for a second medical school be gotten underway. The new medical school should be available for students in 1970–71, should contain a minimum of 450,000 square feet of space, and should be located in the Houston area.
3. That steps be taken to assure that the location of the proposed new public health service hospital will be on a site adjacent to The University of Texas Medical Branch in Galveston.
4. That the proposed general medical and surgical hospital of the Department of Corrections be located on the Medical Branch campus and operated through a contract relationship as a teaching facility by the Medical Branch.
5. That state support be given to the Medical Branch's effort to secure one of the three medically oriented marine biology institutes to be established with federal funds.
6. That a school of allied health sciences be established in Texas as a state-supported institution at the Medical Branch campus.
7. That there be constructed at once a second state-supported school of dentistry.
8. That a building of 175,000 square feet be erected as a graduate school of biomedical sciences at Houston.
9. That approval be given to plans for a hotel-clinic building at the M. D. Anderson Hospital and Tumor Institute which will provide for a wide range of accommodations from domiciliary through minimal to intermediate care.
10. That long-range site planning and land acquisitions programs be developed and reviewed annually for each medical school and health-related school in Texas.
11. That a health resources information center be established for the purpose of continuous compilation, correlation and study of data pertaining to health in Texas.

Facilities Requirements

1. That the student capacity of existing medical schools in Texas be increased from their present 265 students to 292 students in 1967, 360 in 1968, 388 in 1969, and 425 in 1970.
2. That a physical plant construction schedule be approved and implemented as part of a long-range development program for Southwestern Medical School. These physical facilities should include in order of priority a library ($3 million), basic sciences research building ($5 million), administration building ($500,000), classroom and teaching building ($3 million), a graduate teaching center ($1,750,000), an animal hospital ($700,000), the remodeling of the Cary Building ($1 million), a central power plant ($250,000), site development ($250,000), student housing ($1 million), and a psychiatric institute ($7 million). Total cost of this recommendation estimated at $23,450,000.
3. That the Dental Branch be provided with funds to enlarge its facilities.
4. That temporary space be obtained at the M. D. Anderson Hospital and Tumor Institute for 100 beds providing minimal care of patients, and that facilities be increased by 110 beds for indigent patients, at an estimated cost of $155,650.
5. That an additional wing be added to the M. D. Anderson Hospital and Tumor Institute to house 250 beds.
6. That a medical communications facility of 67,000 square feet be constructed (to include a 2,000 seat auditorium) at the M. D. Anderson Hospital and Tumor Institute, at a cost of $2,100,000.

Library Needs

1. That improved library facilities be developed in The University of Texas medical centers; that a regional medical library network be developed; and that a regional educational television circuit for medical education be implemented.

Faculty Salary and Need for Faculty

1. That the total remuneration to faculty of medical schools, including base salary, consultation income,

and fringe benefits, be made competitive for the salary ranges for medical faculties elsewhere in the nation.

2. That the number of full-time faculty in medical and medical-related education be increased.
3. That administrative and budgetary provisions be made to facilitate a free interchange of faculty personnel between units of the medical education system.
4. That a special program be developed within The University of Texas medical system to identify and recruit members of the teaching faculty for the schools of medicine and health.
5. That graduate education at the Medical Branch and at Southwestern Medical School be supported on a stronger basis, the support to include a number of additional graduate fellowships, the employment of 45 additional faculty members by 1971–73, and the implementation of new degree programs in biomedical sciences (such as environmental health and biostatics).

Administrative Expansion

1. That administrative strength be added to each medical school unit in the fields of planning and development, grants and sponsored research, student affairs, alumni affairs and public information, and professional relations.

Educational Programs Expansion

1. That schools of allied health science be developed at each of the major medical centers, these programs to lead to subbaccalaureate, baccalaureate, and graduate degrees.
2. That training programs in the rehabilitation of patients be initiated at all biomedical components of The University of Texas medical education system.
3. That The University of Texas medical system develop programs for international education in the Americas.
4. That the Texas Dental Branch, cooperating with community colleges, be authorized to activate and enlarge programs of training for dental assistants.
5. That baccalaureate programs in nursing be established at San Antonio and Houston and that the program at the Medical Branch be further developed; that associate degree programs in nursing be developed in the community colleges which are located in geographic proximity to The University of Texas biomedical units; and that the graduate program in nursing be transferred back to the main campus of The University of Texas.

Student Fees and Assistance

1. That the present low tuition for residents of Texas who are medical students be maintained and that various forms of financial assistance to enroll medical students be expanded.
2. Present admission limitation on nonresidents of Texas should be altered to permit acceptance of a maximum of 15 percent nonresident students, provided such admittance does not displace a qualified resident of Texas.

APPENDIX C

Miscellaneous Data, Texas Medical Education
(Source: Texas Board of Medical Examiners)

1. Physicians Graduated, 1957–1967

	Baylor	Dallas	Galveston	Total
1957	90	91	129	310
1961	86	101	103	290
1964	72	89	117	278
1967	79	96	150	325
Total	327	377	499	1,203

2. Total Enrollment, 1964 and 1967

	Baylor	Dallas	Galveston	Total
1964	321	381	541	1,243
1967	361	401	628	1,390

3. Ratio of MD's to Texas Population 1955–1967

1955	1:1,321
1963	1:1,168
1967	1: 997

(U. S. 1967 ratio is 1:658)

4. Headcount Enrollment State Medical Colleges in Texas

MEDICAL UNITS OF THE UNIVERSITY OF TEXAS SYSTEM	1966	1967
Medical Branch at Galveston		
Medical Students	568	572
Graduate	81	70
Paramedical	63	52
Nursing (Clinical)	124	171
Total	836	865
Southwestern Medical School at Dallas		
Medical Students	396	403
Graduate	48	66
Total	444	469
Medical School at San Antonio		
Medical Students	15	21
Dental Branch at Houston		
Dental Students	391	389
Graduate and Postgraduate	52	58
Dental Hygiene	64	70
Total	507	517
Graduate School of Biomedical Sciences at Houston	53	64
School of Public Health at Houston	–0–	2
TOTAL, MEDICAL UNITS OF THE UNIVERSITY OF TEXAS SYSTEM	1,855	1,938

*5. MD's Licensed to Practice in Texas**

Year	Passed by Exam	Passed by Reciprocity	Texas Graduates	Texas† Graduates In-State	Texas† Graduates Out-of-State
1963	384	302	278	168	110
1964	405	384	277	151	126
1965	375	367	282	195	87
1966	365	434	273	183	90
1967	404	427	304	N/A	N/A

* Increases in licensure by reciprocity accounted for by increase of foreign trained medical doctors.

† These Texas graduates leave the state for out-of-state internships or residencies. It is estimated that 90 percent of them return to Texas.

6. Geographic Source of Entering Medical Students, 1965–1966

State	Residents Entering Public Schools in Their State	Residents Entering Private Schools in Their State	Residents Entering Out-of-State Public Schools	Residents Entering Out-of-State Private Schools
Alabama	71	....	7	43
Alaska	....	....	3	1
Arizona	....	....	33	9
Arkansas	103	....	3	9
California	254	116	42	164
Colorado	60	....	2	24
Connecticut	....	5	23	93
Delaware	....	....	6	15
Florida	50	75	19	64
Georgia	100	38	13	27
Hawaii	....	....	12	16
Idaho	....	....	13	12
Illinois	197	144	35	109
Indiana	195	....	4	35
Iowa	113	....	13	17
Kansas	97	....	3	13
Kentucky	65	57	7	22
Louisiana	139	13	1	11
Maine	....	....	3	13
Maryland and DC	104	9	10	78
Massachusetts	0	78	40	99
Michigan	299	....	7	38
Minnesota	142	0	13	34
Mississippi	76	0	8	19
Missouri	77	41	18	23
Montana	....	....	20	8
Nebraska	76	0	1	18
Nevada	....	....	2	4
New Hampshire	....	....	10	8
New Jersey	59	0	43	280
New Mexico	15	0	4	8
New York	371	429	92	435
North Carolina	59	43	4	24
North Dakota	40	....	2	4
Ohio	212	39	25	113
Oklahoma	88	0	7	19
Oregon	69	0	2	20
Pennsylvania	0	427	42	111
Puerto Rico	58	....	1	3
Rhode Island	....	....	4	22
South Carolina	77	0	4	17
South Dakota	19	0	4	5
Tennessee	137	22	1	27
Texas	*248*	*33*	*13*	*48*
Utah	48	0	7	19
Vermont	15	0	0	1
Virginia	114	0	5	34
Washington	66	0	8	33
West Virginia	48	0	7	16
Wisconsin	86	42	9	27
Wyoming	....	....	8	6
Totals	4,047	1,611	663	2,298

Source: *JAMA,* November 21, 1966, pp. 238–61. Total entering all schools: 8,538; percent of residents entering public schools in their state: 46.7; percent of residents entering private schools in their state: 18.9; percent of residents entering public schools outside their state: 7.7; percent of residents entering private schools outside their state: 26.7.

7. Resident Headcount Enrollments of Baylor University College of Medicine

MEDICAL UNITS, BAYLOR UNIVERSITY	1966 Fall Headcount Enrollment	1967 Fall Headcount Enrollment
Medical School, Houston		
Medical Students	n/a	350
Graduate	n/a	79
Subtotal	390	429
Dental School, Dallas		
Dental Students	n/a	385
Graduate	n/a	80
Dental Hygiene	76	77
Subtotal	517	542
Nursing School, Dallas		
Third and Fourth Year Students	96	119
Hospital Administration, San Antonio	61	59
Graduate Research Institute, Dallas	35	24
Total	1,099	1,173

8. Foreign MD's in Texas Practice 1946–1967

Year	No. Licensed
1946–1953	108
1954	11
1955	16
1956	29
1957	40
1958	29
1959	47
1960	54
1961	63
1962	77
1963	116
1964	145
1965	110
1966	134
1967	143

9. Physician-Population Ratio in SMSA Texas Counties, Compared with County Personal Incomes (1966)

County	Physician-Population Ratio	Total County Income
Galveston	1/ 359	$ 307,936,000
Dallas	1/ 613	2,912,699,000
Harris	1/ 635	3,320,933,000
Travis	1/ 651	500,386,000
Nueces	1/ 830	407,187,000
Smith	1/ 833	175,309,000
Tom Green	1/ 862	135,357,000
Jefferson	1/ 909	555,964,000
Tarrant	1/ 950	1,284,810,000
Bexar	1/ 954	1,327,048,000
Taylor	1/ 957	235,357,000
Lubbock	1/1,050	381,315,000
Bowie	1/1,067	98,188,000
Midland	1/1,100	190,422,000
El Paso	1/1,191	610,966,000
McLennan	1/1,195	301,811,000
Potter-Randall	1/1,205	427,258,000
Cameron	1/1,212	182,343,000
Denton	1/1,293	108,327,000
Ector	1/1,466	194,430,000
Johnson	1/1,521	68,222,000
Collins	1/1,654	71,522,000
Ellis	1/1,656	65,726,000
Hidalgo	1/1,838	207,921,000
Brazoria	1/1,928	171,179,000
Jones	1/1,989	31,433,000
Liberty	1/2,135	51,766,000
Orange	1/2,315	112,304,000
Guadalupe	1/2,473	43,939,000
Montgomery	1/2,562	43,086,000
Ft. Bend	1/2,570	65,366,000
Archer	1/6,301	9,791,000
Webb	1/1,878	72,535,000
Wichita	1/ 820	290,119,000

10. A Statement on Internships and Residencies

The local supply of doctors, whatever their particular specialty, seems to depend more directly upon the number of internships and residencies available within a state than it does upon the availability of four-year medical education facilities.

Approval of these hospital-centered programs is the responsibility of the Council on Medical Education of the AMA, with the assistance of its Internship Review Committee. In September, 1965, 772 hospitals in the nation were certified for internship programs, offering a total of 12,954 internship positions. All third and fourth year medical students in the nation's medical schools receive copies of *The Directory of Approved Internships and Residencies* which also details financial support available under the National Intern Matching program. In 1965, seventy-five per cent of the internship positions in the country's hospitals were filled.

The most observable trend in internship programs is that of a continued increase of hospitals affiliated with medical schools. By 1964, only 44 per cent of all approved internship programs were in non-affiliated hospitals. The majority of internship programs (45 per cent) are rotating, 17 per cent are mixed, 37 per cent are straight, and one per cent are family and general practice. Here, too, as in medical education, the emphasis is on opportunities for specialization rather than on the production of the "family" doctor or general practitioner of an earlier day. Nationally, foreign interns totaled 2,361, filling 18 percent of the total (12,954) internships offered in 1965. In Texas, with 426 internships offered in 1966, only three per cent (13) foreign interns filled the vacancies. Texas filled 85 per cent of its internship vacancies in 1965, ten per cent better than the national average of 75 per cent.

One of the pressures for hospitals to become "major medical school affiliated" is traceable to the fact that through the National Intern Matching program in 1965, 152 (84%) of the medical school affiliated hospitals received over 50 per cent of their interns through the NIMP while only 26 per cent of the 481 non-affiliated hospitals received over 50 per cent of their interns through that program.

Internship salaries are lower in the medical school affiliated hospitals, ranging from $2,500 to $4,500 annually. Salaries above $3,500 were paid in 87 per cent of the nonaffiliated hospitals, and 21 percent of the non-affiliated hospitals paid over $5,000 in 1965. Apparently medical students prefer to intern in medical school affiliated hospitals.

At the end of his internship the M.D. may commence practice or continue into a residency, also under the direct control of the responsible committees of the AMA and of the hospitals running the approved programs.

Twenty-nine specialties are offered for residency, and the number of individual vacancies in 1965 was 38,979—of which 82 per cent were filled. Twenty-seven per cent of these positions were taken by foreign graduates.

In Texas, in 1965, there were 168 approved programs of specialty in 46 hospitals with a total residency occupancy offering of 1,357. Texas hospitals filled 83 per cent of these, again slightly above the national average of 82 per cent. Texas had 16 per cent of its filled vacancies occupied by foreign residents. Again, salaries in affiliated hospitals for residents were lower than in non-affiliated hospitals, though seven affiliated and ten non-affiliated hospitals offered salaries above $10,000 in 1965.

According to Lincoln Williston of the Texas Medical Association, only 39 per cent of physicians who have located their practices in Texas during the last two years have been trained in Texas medical schools.

11. A Statement on "Faculty Shortages"

Much has been written about "faculty shortages" in medical schools, but in five of the past seven years additions to medical faculty have exceeded the number of vacancies reported in the previous year.

By and large, the faculty supply problem in medical schools is not different from that in disciplines such as physics, engineering, or modern languages. The number of "vacant budgeted positions" is not a valid indicator of actual need; and the student-teacher ratio in medical schools (especially at the preclinical level) does not indicate that teachers are being given an overload of work.

On the issue of faculty shortages, the following quotations from the *Journal of the American Medical Association** are of interest:

> In spite of the major growth in numbers of full-time faculty members, there are still sizable numbers of budgeted, unfilled faculty positions. In 1965–1966 this number exceeded 1,000 for the first time. The unfilled positions totaled 1,115, an increase of 160 over the previous year's 955, with 443 vacancies reported in basic science departments and 672 in clinical departments.
>
> The percentage of unfilled positions has remained rather constant over the past several years, approximately at 6% of the total number of faculty positions. In 1965–1966 the total was 6.1%, with 7.3% vacancies in the basic science departments and 5.5% in the clinical departments. Vacancies were reported in every department. In the basic science areas, the highest percentage of openings was in physiology, with 8.8%, whereas in clinical departments orthopedics reported 10.9% unfilled positions.
>
> It is always difficult to evaluate the severity of the "faculty shortage" from the figures reported. It must be noted first that the figures represent positions for which funds have actually been budgeted. This does not necessarily represent what the schools consider to be their needs for new faculty members. At some schools, positions are not budgeted until candidates are available for them.
>
> On the other hand, it seems unwarranted to become alarmed over present faculty shortages in view of the major growth in total numbers of full-time faculty in recent years. Although faculty vacancies continue to exist, the medical schools have been able to increase their faculties at a rate proportionately greater than the growth of total teaching responsibilities. In five of the past seven years, the increases have exceeded the number of vacancies reported in the previous year. For example, in 1964–1965 medical schools reported 955 budgeted, unfilled positions. During the following year, however, they added 1,635 new full-time faculty members.
>
> In theory, a "faculty shortage" may be said to exist so long as there is a single budgeted unfilled position at any medical school. If this is the index used, there will probably always be shortages, since the "need" seems almost insatiable. Furthermore, future demands are very likely to increase sharply and the number of budgeted, unfilled positions will probably become progressively greater.

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* Vol. 198, November, 1966, pp. 189–190.

Budgeted Unfilled Full-Time Faculty Positions in Medical Schools (1957–1958 to 1965–1966)

	1957–1958	1958–1959	1959–1960	1960–1961	1961–1962	1962–1963	1963–1964	1964–1965	1965–1966
Anatomy	45	55	58	52	69	73	87	76	71
Biochemistry	28	20	37	35	40	48	57	51	76
Biophysics	3	9	7	2	*	4	¶	¶	¶
Genetics	..	1	4	4	*	*	*	*	*
Microbiology	41	40	62	52	55	57	56	50	63
Pathology	55	62	84	65	77	68	81	86	83
Pharmacology	32	35	34	45	40	38	51	38	47
Physiology	35	29	47	48	57	57	58	55	78
Other basic science departments	..	..	..	2	10	5	11	20	25
Subtotals	239	251	333	305	348	350	401	376	443
Anesthesiology	24	30	28	34	42	33	40	39	31
Dermatology	4	3	7	8	†	10	8	4	5
Medical specialties	..	1	4	4	9	‡	..	..	..
Medicine	63	48	76	72	65	67	62	79	93
Neurology	7	12	16	16	15	18	14	18	23
Obstetrics-gynecology	28	47	50	46	54	46	40	40	56
Ophthalmology	9	11	5	11	12	9	16	17	13
Orthopedics	13	4	11	13	§	12	8	21	17
Otolaryngology	12	7	11	11	§	14	17	17	19
Pediatrics	37	43	54	41	42	44	58	67	95
Physical medicine	10	6	19	19	17	8	7	15	15
Psychiatry	55	61	85	74	53	57	72	69	75
Public health—preventive medicine	44	34	47	40	46	42	40	50	48
Radiology	30	36	34	36	52	43	48	55	58
Surgery	44	48	58	43	47	62	70	58	79
Surgical specialties	4	..	1	4	34	‡	..	..	..
Urology	5	12	9	7	§	6	14	7	6
Other clinical departments	..	..	..	..	..	5	..	23	39
Subtotals	389	403	515	479	488	476	514	579	672
Totals	628	654	848	784	836	826	915	955	1,115

* Included in other basic science departments.

† Included in medical specialties.

§ Included in surgical specialties.

‡ Included in other clinical departments.

¶ Included in physiology.

12. Analysis of Requested Appropriations, Medical Units of The University of Texas System, Fiscal Year 1969

General revenue appropriations for fiscal year 1968 for the medical units total $33.6 million. For fiscal year 1969, general revenue appropriations of $41.1 million have been requested, representing an increase of $7.5 million or 22.2%. An analysis of general revenue funds appropriated for each unit for fiscal year 1966, 1967, 1968 and amounts requested for fiscal year 1969 appears in Table 1. For the same period of time, all funds appropriated and requested by appropriation item for the three medical schools are shown in Table 2.

Funds appropriated and requested for the Medical Branch at Galveston include separately identified funds for the operation of the hospital units supported by the state. No state support is provided for the hospital units of Southwestern Medical School at Dallas or the medical school at San Antonio. These schools have teaching hospital affiliation in the cities where they are located.

Prior to 1968 appropriations to the medical unit at Galveston included funds for the School of Nursing at that institution. In 1968 the 60th Legislature made an appropriation of $250,000 to The University of Texas School of Nursing (System-wide) "For the purpose of operating a system-wide School of Nursing through educational units of The University of Texas System at Austin, Galveston, San Antonio and El Paso. . . ." Funds for nursing were also appropriated to the Medical Branch at Galveston. For 1969, all funds for nursing education are being requested by the School of Nursing (System-wide), which has established administrative offices on the campus of The University of Texas at Austin.

A detailed analysis of medical school enrollment for the fall semesters of 1965, 1966, 1967 and estimated 1968 is contained in Table 3. No attempt has been made to relate enrollment to appropriations because of the various types of enrollment.

Table 1

ANALYSIS OF GENERAL REVENUE APPROPRIATIONS AND REQUESTS

Medical Units of the University of Texas System

					Increase Requested 1969 over Appropriated 1968	
Unit	Appropriated 1966	Appropriated 1967	Appropriated 1968	Requested 1969	Amount	Percent
			(Millions of Dollars)			
Medical Branch at Galveston	$ 9.0	$ 9.4	$12.4	$13.6	$1.2	9.5%
Southwestern Medical School at Dallas	3.3	3.4	4.7	6.1	1.5	31.2
Medical School at San Antonio	0.5	1.2	2.0	4.8*	2.7	134.4
Subtotal, Medical Schools	$12.8	$13.9	$19.1	$24.5	$5.4	28.1%
Dental School at Houston	$ 2.5	$ 2.6	$ 2.9	$ 3.3	$ .5	15.8%
M. D. Anderson Hospital and Tumor Institute at Houston	6.6	6.6	8.4†	9.6	1.2	14.4
Graduate School of Biomedical Sciences at Houston	0.2	0.2	0.4	1.0	0.5	129.8
School of Nursing (System-wide)			0.3	0.7	0.5	199.0
School of Public Health			0.3	0.8	0.5	206.2
Total, Medical Units of the University of Texas System	$22.1	$23.4	$31.3	$39.9	$8.6	27.4%

* Does not include $1.1 million for furnishings and equipment, and a physical plant building. Including the $1.1 million, the requested amount for 1969 would be an increase of $3.9 million or 189.6% over appropriated 1968.

† Does not include appropriation of $2.3 million for furnishings and equipment. Including the $2.3 million, the requested amount for 1969 would be a decrease of $1.0 million or 9.8% compared with appropriated 1968.

NOTE: Detail may not add to totals due to rounding.

TABLE 2

ANALYSIS OF TOTAL APPROPRIATIONS BY APPROPRIATION ITEM

Medical Schools of the University of Texas System

Educational Units	Appropriated 1966		Appropriated 1967		Appropriated 1968		Requested 1969	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
MEDICAL BRANCH AT GALVESTON								
Educational Units:								
Executive Director and Dean	$ 19,000	0.4%	$ 19,000	0.4%	$ 22,500	0.3%	$ 37,500	0.5%
All Other General Admin.	369,986	7.6	379,990	7.6	519,340	8.1	621,177	8.8
General Institutional Exp.	116,061	2.4	121,864	2.4	190,296	3.0	(486,626)	(6.9)
Faculty Development Leaves							113,420	1.6
Employee Insurance Benefits							164,339	2.3
All Other Gen. Inst. Exp.							208,867	3.0
Instructional Salaries	3,449,745	70.8	3,624,112	72.3	4,645,043	72.2	4,721,010	66.6
Departmental Operating Exp.	227,997	4.7	177,304	3.5	204,457	3.2	249,000	3.5
Merit Scholarships	9,600	0.2	9,600	0.2	9,600	0.2	9,600	0.1
Organized Activities Related to Instruction	165,957	3.4	168,967	3.4	201,437	3.1	264,685	3.8
Library	89,009	1.8	89,866	1.8	132,956	2.1	164,568	2.3
Extension	7,634	0.2	7,634	0.2	8,010	0.1	8,370	0.1
Physical Plant Operation and Maintenance	415,283	8.5	412,447	8.2	497,771	7.7	523,610	7.4
Subtotal, Educational Units	$ 4,870,272	100.0%	$ 5,010,784	100.0%	$ 6,431,410	100.0%	$ 7,086,146	100.0%
Hospital Units	9,971,952		10,247,627		13,142,768		13,612,881	
TOTAL, ALL FUNDS	$14,842,224		$15,258,411		$19,574,178		$20,699,027	
SOUTHWESTERN MEDICAL SCHOOL AT DALLAS								
Dean	$ 19,000	0.5%	$ 19,000	0.5%	$ 22,500	0.4%	$ 40,000	0.6%
All Other General Admin.	247,845	6.1	248,329	6.0	421,868	8.1	645,214	9.6
General Institutional Exp.	147,412	3.6	147,412	3.6	223,873	4.3	(448,357)	(6.7)
Faculty Development Leaves							105,596	1.6
Employee Insurance Benefits							70,657	1.1
All Other Gen. Inst. Exp.							272,104	4.0
Instructional Salaries	2,620,255	64.5	2,695,255	65.1	3,206,097	61.8	3,842,940	57.2
Departmental Operating Exp.	185,175	4.6	185,875	4.5	249,030	4.8	306,808	4.5
Organized Activities Related to Instruction	93,318	2.3	93,318	2.3	156,908	3.0	259,026	3.9
Merit Scholarships	6,000	0.2	6,000	0.1	6,000	0.1	12,000	0.2
Library	98,374	2.4	100,132	2.4	137,037	2.7	207,739	3.1
Organized Research	50,000	1.2	50,000	1.2	52,950	1.0	65,000	0.9
Extension	18,371	0.5	18,371	0.4	22,060	0.4	27,358	0.4
Physical Plant Operation	564,654	13.9	569,562	13.7	677,054	13.1	845,676	12.6
Major Repairs and Rehabilitation	9,000	0.2	9,000	0.2	13,600	0.3	20,700	0.3
TOTAL, ALL FUNDS	$ 4,059,404	100.0%	$ 4,142,254	100.0%	$ 5,188,977	100.0%	$ 6,720,818	100.0%

NOTE: Current appropriations for the educational units at the Medical Branch at Galveston and requested acounts for 1969 are on a different accounting basis than previous appropriations. Certain costs previously charged to the educational units are now appropriated and allocated to the hospital units to more accurately reflect costs of these operations. To provide a basis for comparison on the same accounting basis, appropriated amounts shown for 1966 and 1967 for the Medical Branch at Galveston have been adjusted.

TABLE 2 (Continued)

Educational Units	Appropriated 1966		Appropriated 1967		Appropriated 1968		Requested 1969	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
MEDICAL SCHOOL AT SAN ANTONIO								
Dean	$ 19,000	1.8%	$ 19,000	1.6%	$ 22,500	0.8%	$ 32,500	0.7%
All Other General Admin.	75,661	7.1	75,946	6.5	176,477	6.1	305,752	6.3
General Institutional Exp.	64,100	6.0	64,100	5.5	119,580	4.2	(325,883)	(6.7)
Faculty Development Leaves							60,555	1.2
Employees Insurance Benefits							38,092	0.8
All Other Gen. Inst. Exp.							227,236	4.7
Instructional Salaries	755,640	70.7	826,984	70.6	1,385,050	48.2	2,459,644	50.6
Departmental Operating Exp.	55,000	5.1	84,700	7.2	400,000	13.9	237,150	4.9
Organized Activities Related to Instruction					120,502	4.2	318,909	6.5
Library	100,000	9.3	100,000	8.6	246,446	8.6	410,320	8.4
Physical Plant Operation and Maintenance					400,000	13.9	769,950	15.8
Merit Scholarship Awards					900	0.1	3,000	0.1
Furnishings and Equipment					(800,000)*		957,177	†
Physical Plant Building							170,000	†
TOTAL, ALL FUNDS	$ 1,069,401	100.0%	$ 1,170,730	100.0%	$ 2,871,455	100.0%	$ 5,990,285	100.0%

* Vetoed by Governor; amount not included in total.

† For comparative purposes the amounts requested for Furnishings and Equipment and Physical Plant Building were excluded in computing the percent distribution.

TABLE 3

ANALYSIS OF ENROLLMENT

Medical Units of The University of Texas System

	Fall Headcount Enrollment			
	Actual			Est.
	1965	1966	1967	1968
MEDICAL BRANCH AT GALVESTON				
Undergraduate Medical Students:				
Resident	499	533	553	553
Non-Resident	13	16	18	18
Students Exempt from Tuition	26	14	7	15
Subtotal, Undergraduate Medical Students	538	563	578	586
Medical Services Students:				
Medical Technology	9	16	10	15
X-ray Technology	25	20	22	25
Physical Therapy	21	14	29	20
Electroencephalographic Technology	..	2	2	3
Subtotal, Medical Services Students	55	52	63	63
Graduate Medical Students (Exempt from Tuition):				
Interns	37	42	42	42
Residents	124	176	166	166
Graduate Medical Students (Basic Science)	45	47	72	65
Subtotal, Graduate Students	206	265	280	273
School of Nursing:				
Undergraduate				
Austin Campus	163	177	..	..
Galveston Campus	113	109	..	..

TABLE 3 (Continued)

ANALYSIS OF ENROLLMENT
Medical Units of The University of Texas System

	Fall Headcount Enrollment			
	Actual			Est.
	1965	1966	1967	1968
Graduate				
Austin Campus	3	5	..	..
Galveston Campus	6	5	..	..
Subtotal, Nursing Students	285	296	..	..
TOTAL STUDENT ENROLLMENT	1,084	1,176	921	922
MEDICAL BRANCH AT GALVESTON				
Level of Undergraduate Medical Students:				
First Year	152	155	152	158
Second Year	147	150	150	150
Third Year	130(a)	151(b)	146(c)	147(d)
Fourth Year	109	107	130	131
Total	538	563	578	586
SOUTHWESTERN MEDICAL SCHOOL AT DALLAS				
Undergraduate Medical Students:				
Resident	373	370	382	390
Non-Resident	13	10	10	15
Students Exempt from Tuition	2	..	4	2
Subtotal, Undergraduate Medical Students	388	380	396	407
Medical Services Students:				
Graduate Students (Basic Science)	33	38	65	55
Students Exempt from Tuition	1	1	2	4
Subtotal, Medical Services Students	34	39	67	59
TOTAL STUDENT ENROLLMENT	422	419	463	466
Level of Undergraduate Medical Students:				
First Year	101	101	101	108
Second Year	101	99	98	98
Third Year	92	96	101	101
Fourth Year	94	84	96	100
Total	388	380	396	407
MEDICAL SCHOOL AT SAN ANTONIO				
Undergraduate Medical Students:				
Resident	..	..	15	21
Level of Undergraduate Medical Students:				
First Year	..	..	15	7
Second Year	..	..	..	14
Third Year	..	..	..	..
Fourth Year	..	..	..	..
Total	..	..	15	21
UNIVERSITY OF TEXAS SCHOOL OF NURSING (SYSTEM-WIDE)				
Undergraduate	..	..	346	..
Graduate	..	..	19	..

(a) Includes 18 alternate students who graduated in June, 1965.
(b) Includes 15 alternate students who graduated in June, 1966.
(c) Includes 18 alternate students who graduated in June, 1967.
(d) Includes 15 alternate students who will graduate in June, 1968.

SOURCE: Institutional requests for legislative appropriations.

APPENDIX D

Proposals to Increase Medical Education Enrollment Facilities in Texas

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Enrollment of Texans in Medical Schools

During the decade 1956–66 the number of Texans newly enrolled in medical studies ranged from 318 to 359 with an average enrollment of 344.

The enrollment of these Texans was typically distributed as follows: *

	Texans	*Total Enrollment*
University of Texas (Galveston)	150	162
University of Texas (Dallas)	103	105
Baylor	35	84
Other Medical Schools in U.S.A.	56	NA
	344	

* 1966 data from *JAMA,* November 20, 1967.

In September, 1968, the number will increase from approximately 344 to 394 due to the seating of 50 new students at The University of Texas, San Antonio.

The further increase in size of the San Antonio School to its constructed capacity of 100 students per class would bring the annual enrollment figure of Texans to about 444. This increase likely could be expected by 1970.

Additional increases in the enrollment of Texans can best be handled by expansion of the three older schools, (1) Baylor, (2) University of Texas, Galveston and (3) University of Texas, Dallas.

Baylor

During its 25 years in Houston, Baylor has developed a rich variety of academic offerings in addition to its education of an annual crop of 80 or more M.D. graduates. In 1967–68 Baylor is providing learning experiences for the following:

Medical students	343—84 M.D. graduates, 1968
Ph.D. students	80—15 Ph.D. graduates, 1968
Interns	80
Residents	246
Postdoctoral Fellows	126

Approximately three million dollars devoted to training programs (NIH support) are producing a flow of highly skilled candidates for faculty positions.

Research expenditures in 1967–68 are estimated to be in excess of fifteen million dollars.

Baylor's salaried faculty consists of the following:

Professors	77
Associate Professors	83
Assistant Professors	172
Instructors and Research Associates	124
Total	456

Baylor Expansion Programs

Having achieved a certain maturity in its total list of training areas, Baylor now proposes to enlarge its enrollment of beginning medical students from 84 to 160; increase its annual input of Ph.D. students from about 24 to 40 and concurrently develop a small school of Hospital and Medical School Administration enrolling 15–20 students annually. *This expansion could be effected at the end of four or five years from the date that the fiscal needs for the new program become available.*

M.D. Expansion Needs:

1. *A new classroom building* approximating the size of the Cullen Building now housing classrooms and professors' offices for 84 students per class in the basic science areas. *This building is estimated to cost about eight million dollars.* New federal legislation may enable a two-thirds matching program with the balance to be derived from private resources.

2. *Additional annual operating expenses in the order of three million dollars.* This amount represents the cost of operation of the new building and the salaries of necessary additions to the faculty and staff of the College.

It is too much to expect the private sector to absorb this sudden increment in Baylor's cost of operation—clearly public funds are needed to solve the crisis in medical education.

The Pennsylvania system of state percapitation payments to private medical colleges could be followed in Texas through direct appropriation or through some system of contract between Baylor and a state agency.

Direct federal aid to medical schools may be available before the Baylor expansion plan is complete.

3. *Additions to the faculty.* Baylor's salaried faculty of 456 persons, supplemented by 900 voluntary teachers, is sufficiently large and well known to attract able and ambitious young graduates of the nation's training programs. Those young people finishing Baylor's large system of advanced training in medicine and the medical sciences would be prime talent for lower rank recruitment in the expanded program. The four to five year building time lag would give Baylor opportunity to engage in selective promotion of medium rank members of the 1967–68 faculty to the more senior positions justified by the expansion program. Thus, relatively few new faculty members from outside will be needed to double Baylor's entering class of medical students.

4. *Clinical facilities now available are sufficient for the pre-M.D. expansion.* Methodist, St. Luke's, Texas Children's, Ben Taub, Jefferson Davis, Veterans' hospitals and Rehabilitation hospitals are heavily used now for Baylor's responsibilities in the training of interns, residents and postdoctoral fellows. All of these persons would assist the faculty in the instruction of the enlarged M.D. class.

University of Texas Medical Branch, Galveston

Texas' oldest medical school has developed a strong basic science division and an adequate clinical program for M.D. students. Enrollment has been forced upward, however, to the point that clinical facilities may become marginal in the future as Medicare and similar practices force a decline in patient admissions to the school's state hospital. Thus, in the future the school may have to export its students outside Galveston in order to obtain well balanced clinical teaching facilities.

The school in Galveston must depend on clinical facilities in Houston for any possible expansion and possibly its long term survival at its present size of 155 first year students (162 in 1966). Development of clinical clerkships at Hermann Hospital, St. Joseph's Hospital and the Memorial Baptist Hospital System should be encouraged and facilitated. When these developments are complete and additional basic science additions are made, the school should consider enlargement of its entering M.D. class from 155 to 200. This might require five to eight years to accomplish. Such expansion would require adequate financial support from the state.

University of Texas, Dallas

This comparatively young school has made excellent progress since its founding in 1943. Situated in a large population area (the largest in Texas), it now enrolls 105 new medical students annually and, in addition, has developed large programs to train the intern, resident and fellow. The school, with adequate financial backing, should be ready to expand from 105 to 200 entering students by the middle of the 1970's or a few years later.

University of Texas, San Antonio

In 1968 this new school will enroll 50 beginning students plus a small number of sophomores and juniors previously enrolled at Galveston and Dallas. Expansion to 100 entering students can be expected by approximately 1970–71, and further expansion to 150 or 200 students can be contemplated by 1978–80.

Summary of Proposed Expansion Plans and Projected Enrollment (At Entrance)

	Total	Baylor	Texas Galveston	Texas Dallas	Texas San Antonio
1966	356	84	155	105	12*
1968	394	84	155	105	50
1969	394	84	155	105	50
1970	444	84	155	105	100
1971	444	84	155	105	100
1972	444	84	155	105	100
1973	520	160	155	105	100
1974	520	160	155	105	100
1975	520	160	155	105	100
1976	520	160	155	105	100
1977	615	160	155	200	100
1978	615	160	155	200	100
1979	660	160	200	200	100
1980	710	160	200	200	150

* At Galveston and Dallas.

It would appear that cooperative action involving public and private institutions of higher learning, state and federal governments, and private donors could result in an expansion of nearly 100% of enrolling capabilities of M.D. students *without establishment of any new schools.* This 100% increase could be completed in approximately twelve years, with significant increases in entering spaces at intervals of three or four years.

The Expansion of Baylor Medical School: A Statement from the Private College Liaison Committee's Research Monograph

Baylor University operates the only independent medical school in Texas. The other two are affiliated with The University of Texas, as is a fourth scheduled to open officially in September, 1968. Baylor College of Medicine began operation under Baylor auspices in Dallas in 1903. It was moved to Houston in 1943 and developed as part of the Texas Medical Center.

The Baylor College of Medicine is engaged in the instruction of medical students, graduate students working toward the Ph.D. degree, interns, residents, and postdoctoral fellows. Current enrollment is composed of 350 medical students, 80 Ph.D. students, 80 interns, 246 residents, and 126 postdoctoral fellows—a total of 882. The college is staffed by 450 salaried faculty members and has a full-time faculty equivalent of 502. In addition to the students who are the primary responsibility of the school, it is providing instructional services to nursing, occupational therapy, and physical therapy students from Texas Woman's University in Denton. Through its Department of Psychiatry, it also provides preceptorships for psychology students from the University of Houston.

Physical facilities consist of 500,000 square feet in the Cullen, Jones, Anderson, Jewish, and Service Buildings.

The purposes and objectives of the medical school are to educate health personnel at all levels, to train faculty members for medical schools, to participate in research in the medical sciences, and to provide a variety of patient care services in charity hospital facilities and other public institutions.

Located in the state's largest metropolitan area, the school's faculty engages in a wide variety of academic services to the Houston Public School System and to special schools, institutes, and colleges by providing lecturers, visiting speakers, consultants, advisors, and visiting professors. In the service area, the institution is responsible for medical staffing at Ben Taub and Jefferson Davis Hospitals. It also has responsibility for patient care at the large Veterans Hospital in Houston as well as for setting standards for patient care at Methodist Hospital, St. Luke's Hospital, and the Texas Institute for Rehabilitation and Research.

The research programs at Baylor College of Medicine are among the largest of those at any medical school or full university in the nation. During the 1967–68 fiscal year, the college expects to spend more than $15 million in specific project research and in research training programs. It has established an international reputation because of such distinguished research contributions as those in heart surgery under the leadership of Dr. Michael DeBakey, Dr. Denton Cooley, and their associates. As a consequence, patients are brought to Houston from all over the world for definitive medical care.

As an integral part of Baylor University, the College of Medicine is sponsored by the Baptist General Convention of Texas. However, when the college moved to Houston from Dallas in 1943, there was an agreement between the Baptist General Convention and the M.D. Anderson Foundation of Houston that the college would be operated on a non-sectarian basis and that its students and faculty would be appointed on a merit basis without regard to religious affiliation. The college annually receives about $130,000 from the Baptist General Convention for operating costs. Total operating budget for the current year, including the research funds previously mentioned, is in excess of $20 million.

The policy of the college for many years has been to draw its students from the national population at large on the theory that, because of the extreme mobility of physicians, colleges of medicine must be looked upon as national rather than strictly state or regional resources. In the past, entering classes of 84 students usually included about 35 Texans. However, the tendency in the last year or two has been to admit entering classes composed about 50 per cent of Texans. From 20 to 30 per cent of each class is composed of students from states contiguous to Texas, with the balance from the remainder of the United States.

Baylor's College of Medicine is now planning and working toward doubling its enrollment of entering medical students, with the hope that a 100 per cent larger entering class (160 as opposed to the present 80) can be enrolled by the fall of 1974. This is dependent upon additional financial resources and the construction of additional classroom facilities which would be needed for the expansion. The major need is for a new science building which would cost an estimated $8 million. If this enlargement of facilities is possible, it is likely that the proportion of Texans in the entering classes could be increased from 35 to 42 out of 84 to something like 100 out of 160, depending upon the availability of qualified candidates who could compete with the national applicant pool.

The proposed expansion, college administrators say, will have to be financed through a combination of private, state, and federal resources, since the private sector could not realistically be expected to double its financial commitment to Baylor within the next few years. Enrollment increases are out of the question unless additional classroom and laboratory facilities are provided, since the enrollment ceiling now in effect was established by accreditation authorities.

Baylor's College of Medicine also has capabilities for expanding its program for selecting, educating, and training prospective members of faculties of medicine. It spends about $3 million annually on research and training projects specifically designed to train faculty members to staff the expanding numbers of colleges of medicine in the nation. Additional enrollment in the graduate studies program would permit an increase in the expected annual output of 15 Ph.D.'s per year during the next decade.

The growing need for more physicians in the state is acknowledged by educational planners and by the Texas Medical Association, which has urged an immediate expansion of existing medical education facilities in Texas, the approval of a new four-year medical school as soon as possible, and consideration of a second new school. Expansion of Baylor's College of Medicine has been mentioned as an especially promising possibility.

A study completed in 1967 indicates that Texas is producing less than half its own medical manpower, while demand continues to increase both because of population growth and new medical programs such as Medicare and Medicaid, which provide governmental financing of medical services. Recent surveys show that there is one medical doctor in Texas for every 997 persons, compared to a United States physician-population ratio of one to 660. Only 45 per cent of the physicians who have joined the Texas Medical Association since 1961 are natives of Texas, and 52 per cent of this group received their medical training in other states. Deans of Texas medical schools report that the number of qualified applicants who did not gain admission this year would fill the entering classes of several new schools.

The problems of establishing new medical schools may be illustrated by the case of the state's newest public medical school, the University of Texas Medical School in San Antonio. Authorized by the Legislature in 1959, it officially opened in September, 1968—a time lapse of almost ten years. Almost $26 million in state funds has been appropriated for the school since it was authorized.

Through cooperative arrangements with Baylor University's College of Medicine, the state might buy on a contract basis the education of from 58 to 65 additional medical students a year, contingent upon the expansion plans discussed above, at much lower cost than it could construct, equip, and staff a new medical school to accommodate this number of students. Not only would such a plan be more economical, but it would have the advantage of operating from an established and prestigious base much sooner than a new medical school could be activated.

Contractual arrangements of this kind have worked well in New York, where the need for additional manpower in this field was recognized. The state is subsidizing 12 existing private medical schools, each of which has agreed to accept five or six additional students each year. The subsidy is in the form of $5 million in capital funds for expanding facilities plus $6,000 a year for each additional student accepted. This plan has created an "instant medical school" at far less expense to the state than building one or more new institutions to provide such training. The arrangement has been so satisfactory that a similar one is now under consideration to provide training for additional students in schools of dentistry.

APPENDIX E

Opinion No. C-719 of the Attorney General of Texas

July 8, 1966

Honorable J. W. Edgar
Commissioner of Education
Texas Education Agency
Austin, Texas 78711

Opinion No. C-719

Re: Whether the Vocational Rehabilitation Division of the Texas Education Agency can pay tuition for handicapped individuals to attend denominational schools as a vocational rehabilitation service, and a related question.

Dear Dr. Edgar:

You have requested the opinion of this office regarding the subject question. This request is occasioned by the release of Attorney General's Opinion C-644 (1966).

In Opinion C-644 this office dealt with the question of whether the Governor's Committee on Aging could constitutionally contract with religious institutions for the performance of services necessary in carrying out the duties and functions of the Committee. In concluding that such contracts did not constitute state aid to religious societies, it was necessary for this office to overrule Attorney General's Opinion O-2412 (1940).

Opinion O-2412 was written in response to the identical question now before us. Since O-2412 has been overruled, we must examine the conclusions reached in Opinion C-644 in order to determine whether the proposed school attendance is proper. The following statement is quoted from C-644:

> "It is well settled that a private agency may be utilized as the pipe-line through which a public expenditure is made, *the test being not who receives the money, but the character of the use for which it is expended.*"

The Vocational Rehabilitation Division of the Texas Education Agency is authorized by Article 2675–1, Vernon's Civil Statutes, to cooperate with the Federal Government in the rehabilitation of handicapped persons. By the Vocational Rehabilitation Act, 29 U.S. Code 31, et. seq., the United States Department of Labor is authorized to make grants to individual states upon certain terms and conditions, and pursuant to a State Plan. The payment of college tuition for handicapped persons is an expenditure of public money for a valid public purpose under the aforesaid statutes.

Our question thus becomes one of whether there is a significant difference between the payment of tuition to a non-denominational college and to one connected with or operated by a religious society. It is the opinion of this office that Attorney General's Opinion C-644 completely controls this question. If a valid public purpose is being served, in this case the retraining of handicapped persons, and the State is expending money for services rendered, the character of the private agency rendering the public service does not control the validity of the expenditure.

Your second question is concerned with the manner of payment of tuition by the State to the various colleges concerned. In C-644, it was stated that payment to private agencies may be made pursuant to contract, only after the services have been rendered to the State. You ask whether it is possible to make the tuition payments at the time of registration, or whether such payments must be withheld until the end of a semester.

In sending persons to various schools and colleges under the Vocational Rehabilitation Division program, the State itself is not entering into a contract with the particular school as regards a particular student. Of course, a contract is created between the school and the student at the time of registration. Attorney General's Opinion O-2106 (1940), and authorities cited therein. In order to complete this contract, tuition must be paid on behalf of the student. Further, the payment of tuition at the end of the registration time contemplates certain services that have already been provided by the school, as well as those to be provided in the future. For the foregoing reasons, it is the opinion of this office that the payment of college tuition for handicapped persons should be made at the time of registration. It is our view that this conclusion is not in conflict with the opinion expressed in Attorney General's Opinion C-644, for the reason, among others, that college registration and tuition payment constitute a different character of expenditure from the ordinary and usual commercial purchase.

SUMMARY

The Vocational Rehabilitation Division of the Texas Education Agency can pay tuition for handicapped individuals to attend denominational schools as a vocational rehabilitation service.

Tuition payments for such college attendance should be made at the time of registration for each semester.

Very truly yours,
WAGGONER CARR
Attorney General
By: Malcolm L. Quick

MLQ:mh
APPROVED:
OPINION COMMITTEE
W. V. Geppert, Chairman
John Banks
Pat Bailey
Milton Richardson
Phillip Crawford
APPROVED FOR THE ATTORNEY GENERAL
By T. B. Wright

APPENDIX F

The Criteria for Establishing and Judging Doctoral Programs

The nature of doctoral degree programs, especially the traditional Ph.D., is under constant study and reevaluation by individuals and agencies concerned with higher education in the United States. The proliferation of information, the social and economic changes in the society, the urgent requirements of modern technology and the increasing awareness of the need for more highly educated specialists are among the factors which have created impatience with the productivity of doctoral programs and a demand for the establishment of additional programs. While much of this demand for action is reasonable, much of it indicates a basic misunderstanding of the minimum standards essential in doctoral level work. These standards are qualitative, by and large, and they have been developed in a framework of experience.

Recently the Council of Graduate Schools in the United States and the Association of Graduate Schools in the Association of American Universities have issued two pertinent statements on the nature of the doctoral degree program: (1) *The Doctor of Philosophy Degree,* and (2) *New Doctor of Philosophy Degree Programs.* Both documents define the nature of doctoral education and each establishes criteria necessary for the establishment and maintenance of quality doctoral programs.

Various professional academic associations such as The Modern Language Association and the American Historical Association have developed or are developing specific standards for doctoral work.

The Southern Association of Colleges and Schools, a regional agency responsible for general accreditation of all public and private institutions of higher education in Texas, annually produces its *Standards of the College Delegate Assembly.* These standards include criteria for judging the adequacy of doctoral programs in all institutions under purview of the Association.

Finally, in response to a Coordinating Board request, the association of Texas graduate deans has just completed (May, 1968) a one-year review and study of problems related to the development of doctoral programs in our state. In general, the observations and recommendations in this Texas report adhere closely to the materials cited above. Particularly is this so in regard to basic agreement on the nature of doctoral level work and on the criteria which guide its establishment and maintenance.

From the above sources the following points of agreement are noteworthy:

1. The doctoral degree, whether traditional or one of the newer professional types, must continue to be a "quality" degree. The doctoral candidate must be carefully selected and must be challenged in his or her preparation and examination. The degree program must offer both breadth and depth; and the goal of the program is to "prepare superior students as independent scholars, researchers, and professional teachers."[1]

2. In any quality doctoral program there must be a "critical mass" of superior students, mature senior faculty (a minimum of 4 or 5 for doctoral programs), and excellent library and laboratory resources and facilities. Full administrative support (both philosophic and economic) must be provided.[2]

3. Quality doctoral degree programs are mutually interdependent, and no school should offer a program which, in effect, stands alone. Not only should a university offer a complex of related doctoral curricula, but these must be undergirded as well by strong undergraduate and master's level preparation.[3]

4. Doctoral degree programs are expensive, ranging from $19,000 to $86,000 per student, depending on the field of specialization.[4] Obviously, these per capita costs can be reduced by concentrating resources in fewer rather than in more institutions; and, equally obviously, doctoral programs cannot be added to an institution without careful evaluation. Estimates of cost in 1976 for the current doctoral programs in the ten doctoral degree granting Texas institutions range from $177 million to $234 million. These cost figures are derived from the application of existing formula rates for doctoral work by broad field to estimated projected enrollments at the doctoral level. The figures are estimates only, but they demonstrate the economic requirements of doctoral level education and reemphasize the necessity of strict adherence to standards and criteria in inauguration or continuance of doctoral programs in our universities.

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[1] *The Doctor of Philosophy Degree,* 4.

[2] *Ibid.,* 5 ff.

[3] *Ibid.,* 6. See also, *Standards,* 24.

[4] Estimates used in Gordon Whaley letter (January 19, 1968), 3.

5. The pursuit of a quality doctorate, regardless of career aspirations of the candidate or his employer, is *not* a "part-time" activity. Residency requirements are strict, and with good reason. Continuity of effort is essential. A full-time relationship of the student to the academic program is clearly advisable. An undivided attention to the discipline in which the degree is sought is vital. A quality doctorate is not evidence of upgrading or updating of information, gained on a part-time basis.
6. Facilities requirements for doctoral students and doctoral faculty are extensive, and cannot be duplicated in any large number of Texas institutions, public or private. Library and laboratory facilities, equipment and study space must be designed to foster independent work by the student.[5]
7. The library especially is central to the doctoral enterprise. As such it represents a large element of cost, and one which increases steadily. Quantitative measures are not adequate as such for determining competence in doctoral fields, but it is widely agreed that an institution must have in its *own* book collections several times the basic minimum for an undergraduate institution. Further, the collections must be highly selective. Criteria developed by a committee of the American Historical Association, for example, require a minimum annual expenditure in history collection alone of $25,000 *and* a balanced library collection of 500,000 volumes.[6] The Ph.D. library must have developed its collections in depth and breadth, in specialized journals and documents of both primary and secondary sources in all major branches of knowledge, and particularly in areas in which advanced degrees are awarded. These holdings *must* be at the doctoral granting institution by present-day standards. In this matter, no doctoral program should rely upon "nearby" resources of other institutions.[7]
8. The three necessary basic steps to be taken by a Texas state-supported university before it may inaugurate a new doctoral program are: (1) approval of administration and its governing board; (2) approval of the program by the Coordinating Board; and (3) notification to the Executive Secretary of the Commission on Colleges, Southern Association of Colleges and Schools, *at least one year in advance* of program implementation. To ignore step 3 is to place institutional accreditation in jeopardy.

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[5] *New Doctor of Philosophy Degree Programs,* 9–10.

[6] *Standards for Ph.D. Programs in History* (July 14, 1967), 4.

[7] *New Doctor of Philosophy Degree Programs,* 8. See also, *Standards of the College Delegate Assembly,* 24.

APPENDIX G

The Indiana University Proposal

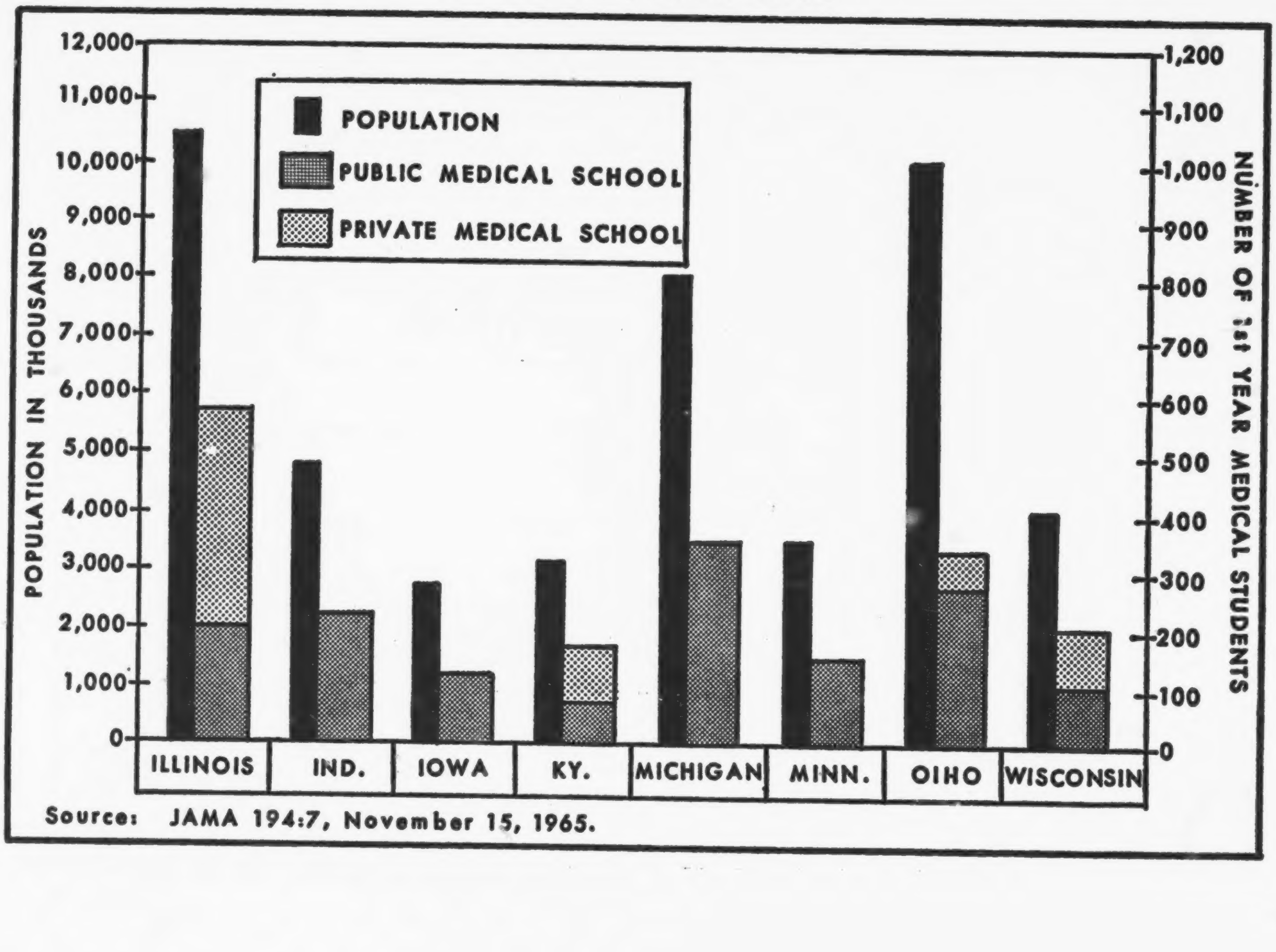
A. An Indiana University Concept of State-Wide Medical Education

1. Development of a State-Wide Educational and Communications Network. It has been pointed out that Indiana needs more doctors. About half of the graduates of the medical school leave the state to enter practice. For this reason, merely increasing the number of medical students is not an efficient answer to the problem. If the state did nothing more than that, it would be educating additional doctors for other parts of the country. The Indiana University answer to this problem is the development of a coordinated state-wide system of undergraduate, graduate, and continuing medical education. The system proposed will provide excellent schooling without conventional restrictions on numbers of students and will be readily adaptable to changing class size. In addition, and very importantly, it will provide an attractive, up-to-date state-wide medical environment which will help to retain physicians in Indiana. This proposal envisions an extensive educational and communications network linking Indiana colleges, universities, and hospitals with the Indiana University Medical Center to teach medical students in multiple locations over the state, increase the number of internships and residencies in hospitals throughout the state, provide comprehensive programs for continuing medical education of the physicians of Indiana, and provide educational programs for the allied health professions as well.

2. Some Special Assets in Support of the Concept. To help develop this program of medical education the state has three special assets: the demonstrated willingness of

Figure 11

SIZE OF 1st YEAR CLASS AND STATE POPULATIONS IN 1000's, 1964-1965



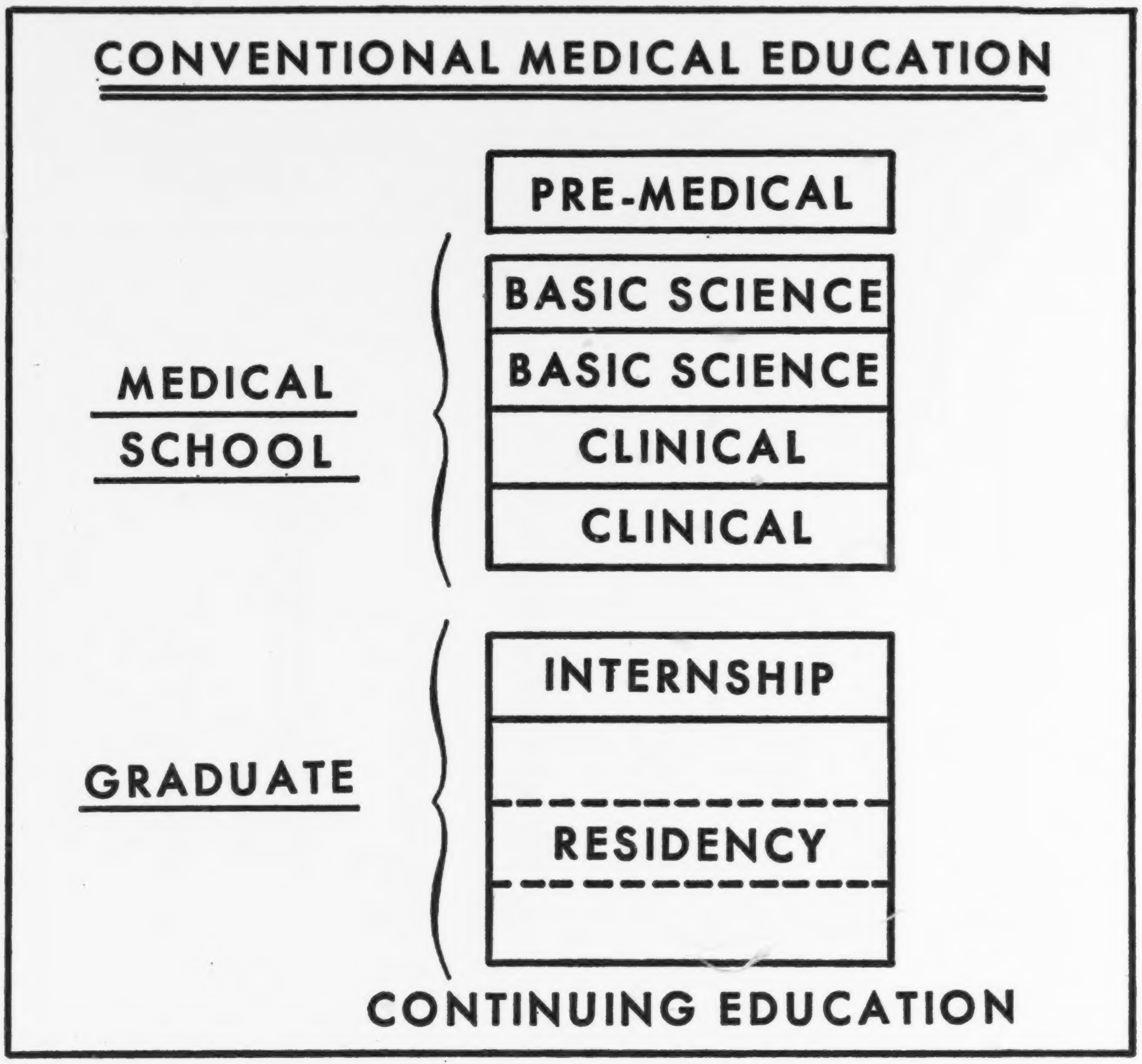
Source: JAMA 194:7, November 15, 1965.

Indiana physicians and hospitals to participate in undergraduate medical education; the resources for medical education and training which can be made available under Public Law 89–239, the Heart Disease, Cancer, and Stroke Amendments of 1965; and the development at Indiana University of new medical teaching concepts which are being embodied in a new medical curriculum.

a) Teaching Potential of Indiana Physicians. The School has already formed an effective teaching partnership with numerous medical practitioners in Indiana who have taken senior medical students for six week periods in a medical preceptorship program sponsored jointly by the School and the Indiana State Medical Association. This program has been enthusiastically received by both practitioners and students, and it has proved to be stimulating and rewarding to both parties. The present program has been presented before an audience of Indiana hospital and clinic administrators, practicing physicians, and members of the State Medical Association.

b) New Legislation. Public Law 89–239 may be a source of considerable support for the program, although it is emphasized that effective implementation of the proposal should be entirely feasible without this support. The legislation provides for grants to "assist in the establishment of regional cooperative arrangements among medical schools, research institutions, and hospitals for research and training (including continuing education) and for related demonstrations of patient care in the fields of heart disease, cancer, stroke, and related disease." The development of a state-wide educational complex serving both undergraduate students and graduate physicians is entirely within the intent of P.L. 89–239. The application for support under this act now in preparation by the medical school in cooperation with the State Board of Health and the Indiana State Medical Association proposes the creation of a regional network linking cooperating institutions with the medical center and featuring undergraduate and comprehensive continuing medical and paramedical

FIGURE 12



education at these institutions; support of internship and residency programs; and the distribution of useful medical information to practicing physicians as they need it.

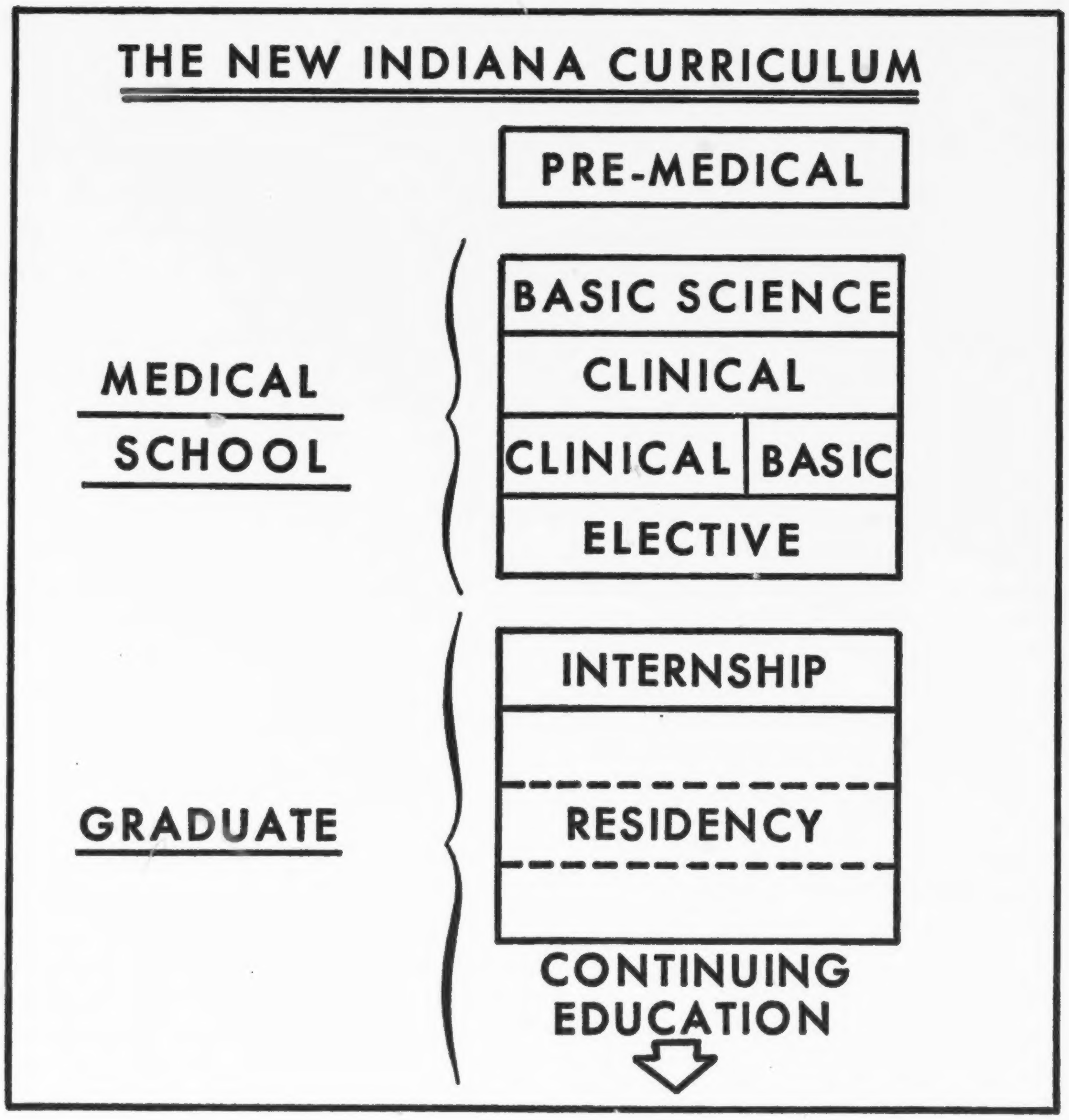
c) A New Curriculum for Indiana University School of Medicine. This new medical curriculum, which is being developed at Indiana, is a most important feature of the new program and for that reason it needs description.

As background, the traditional course of medical education is outlined in Figure 12.

After the period of pre-medical education there are four years of medical school. The first two are so-called "basic science" or pre-clinical years, devoted to the scientific foundations of medical knowledge as presented in the fields of anatomy, biochemistry, physiology, microbiology, pharmacology, and pathology. In the last two years, known as the clinical years, the student learns about disease in patients. The subjects taught here are surgery, medicine, psychiatry, pediatrics, obstetrics and gynecology, and public health. The traditional purpose of this four year course of study was to teach the student the important facts of medicine. After this four years of medical school study and the award of the M.D. degree there is a period of internship and residency during which the student learns how to apply these facts to the actual problems of disease. In this way, he learns to function as a physician. Thereafter, the doctor is expected to assume the task of keeping himself competent by reviewing his knowledge as necessary and learning new facts as they are discovered. He attempts to do this by reading, attending medical meetings, and taking postgraduate courses.

This conventional program is not adequate for today's needs. With increasing medical knowledge, the curriculum

FIGURE 13



Indiana University School of Medicine

has become progressively congested, but the effort to teach all the important facts is hopeless. For many years the amount of medical information really important to the management of disease has been far beyond the grasp of a single physician. In any case, medical progress is now so rapid that much of the information which a student has at graduation from medical school will be superseded in five years. Graduate training is not well coordinated with medical school teaching, resulting in inefficient gaps and overlaps in the educational programs, which ideally should have a planned continuity. Finally, the opportunities for continuing education available to the doctor are seriously deficient in variety and quality, and the programs are not conveniently accessible. As a result, the difficulty which the practicing physician is now having in keeping up with the rapid development of new medical information constitutes one of the most serious problems facing medicine today. In the opinion of the Committee the time has come for medical schools to accept continuing medical education as one of their major responsibilities.

The new Indiana University medical curriculum and the associated educational programs diagrammed in Figure 13 are designed to deal with these problems. The dominant concept in the medical school period is that of coupling a core curriculum with an elective course of study. The core curriculum, which is common to all students, imparts enough basic facts and principles to form a foundation for continuing the medical education process. The elective period gives experience in intensive self-education by permitting the student to direct his attention to the areas in which his interest is greatest. The core curriculum consists of a year of basic science, followed by a year and a half of clinical subjects. The improved quality of premedical education in recent years has helped to make this compression of basic science time feasible. The last half of the junior year has many elective aspects but in general features an advanced basic science study period which is intended to help the student understand the mechanisms of disease and the meaning of phenomena observed in sick people during the clinical period. The senior year is elective and offers both basic and clinical subjects. The student must take at least six months of clinical work, but he can take an entire year if he wishes. The senior year provides a good opportunity for electives in cooperating community hospitals. It is expected that such electives will be in considerable demand. Most medical students are primarily interested in practice, and faculty observation of general practice preceptorships indicates that a great many students are eager for experience which is close to the practice of medicine and generally regard such experience in retrospect as having been valuable. Clinical electives in community hospitals can be supported as needed by proper use of a modern communications network to maintain the student's connection with the Medical Center for supplementary educational programs. Clinical teaching in the community hospital will rely heavily on volunteer faculty supplemented by a director of medical education and other part-time or full-time staff, depending on the size of the particular operation. The preceptorship program of the School has already served as a pilot activity to demonstrate that this method of clinical teaching has many advantages.

The first part of the core curriculum, the basic science year, can be taken in any university or college with a strong basic science department which is organized, staffed and equipped to do this work. This could be done easily in the existing medical science facilities at Bloomington. These facilities could readily be expanded to handle more students and the basic science year of the core curriculum could be taken in fulfilling the requirements of the baccalaureate degree. The Indianapolis campus, of course, has the facilities to teach 200 students in this basic science year.

The second and third years will have to be taken at the Indiana University Medical Center, at least for the first few years of the system's operation. The clinical core curriculum requires the coordinated efforts of clinical teachers from many fields, often supported by basic science departments, all fitted into a compact schedule. The last part of the junior year, which features the correlation of basic science and clinical subjects, makes use of all the teaching talent available in the medical school.

The fourth year can be taken in part or altogether at Indianapolis. It is expected, however, that most students will take at least six months of clinical work in participating institutions, and they may elect to be away for the entire year.

An important feature of this new program is the flexibility involved. This presents the medical student an opportunity and challenge to make an earlier medical career choice and, thus, to speed up the development of his potential as a physician.

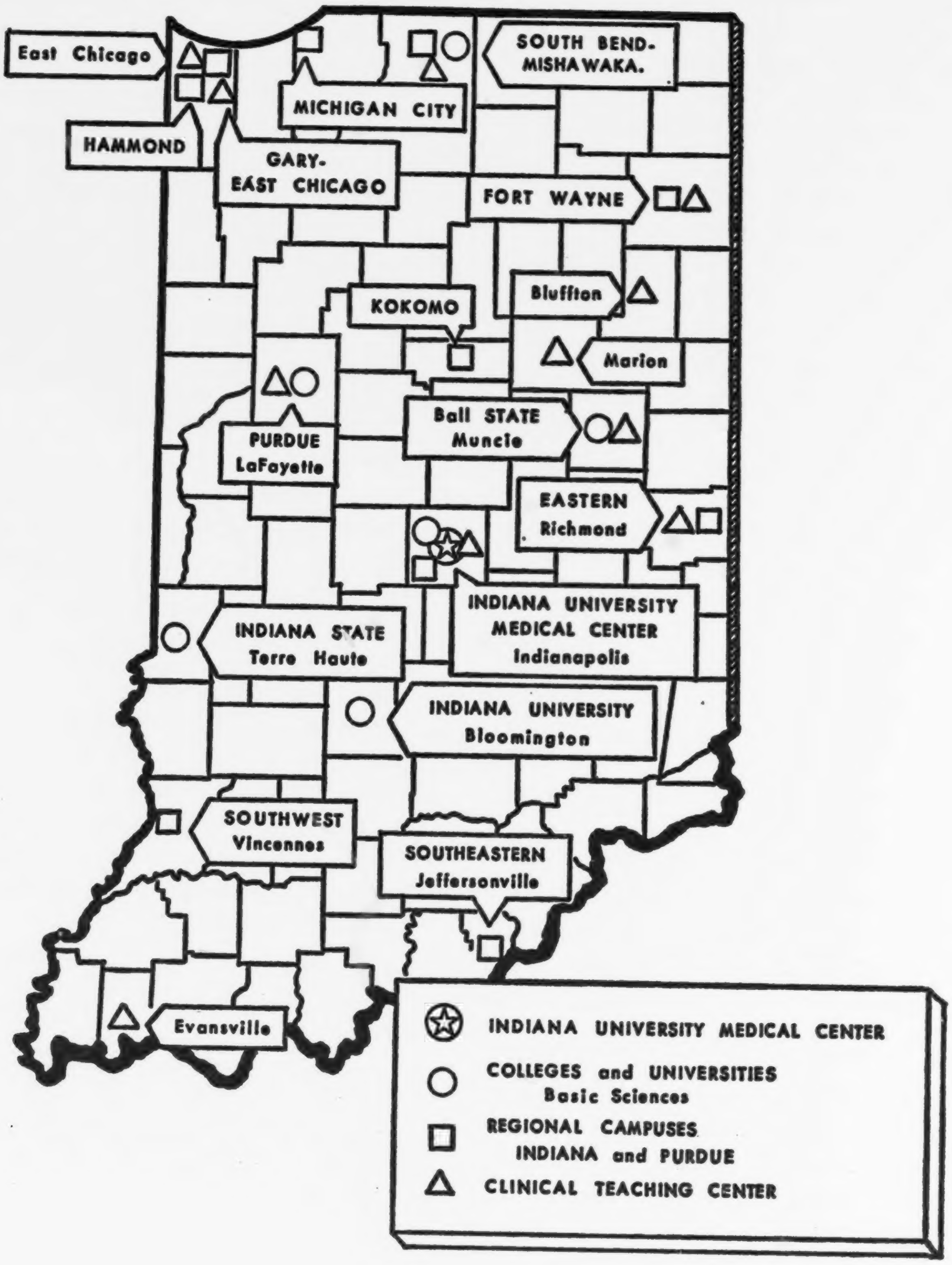
3. A Network of Cooperating Educational Facilities. Figure 14 presents the educational network, with illustrative examples of the types of educational institutions and hospitals which are proposed for inclusion. An educational television network linking the state-supported schools and their regional campuses is now under study. This system could easily be extended to meet the needs of this medical education plan. The same communications system will also be used for the internship and residency programs and for the comprehensive programs of continuing medical education.

4. A Coordinated Improvement and Expansion of Internships and Residencies Throughout the State. For students who remain in this system for their graduate work, there will be no discontinuity in passing from medical school into the internship year. Instructional programs during this period and during the subsequent residency will be available over the network, and the subject matter will be designed specifically to complement and extend the medical school curriculum. These interns and residents will eventually be in contact with all parts of the system. From Indianapolis and Muncie they can participate in a conference which originates in Lafayette. They will also be able to consult specialists in South Bend, Fort Wayne, or in other areas throughout the state.

5. A Comprehensive Program of Continuing Medical Education Responsive to the Changing Needs of Indiana and Its Doctors. Continuing medical education will be available over the same system to the doctor who elects to remain in Indiana for his practice. He may or may not participate actively in teaching. In any case, he will be

Figure 14

THE EDUCATIONAL NETWORK


East Chicago
SOUTH BEND-MISHAWAKA.
MICHIGAN CITY
HAMMOND
GARY-EAST CHICAGO
FORT WAYNE
Bluffton
KOKOMO
Marion
PURDUE LaFayette
Ball STATE Muncie
EASTERN Richmond
INDIANA UNIVERSITY MEDICAL CENTER Indianapolis
INDIANA STATE Terre Haute
INDIANA UNIVERSITY Bloomington
SOUTHWEST Vincennes
SOUTHEASTERN Jeffersonville
Evansville
INDIANA UNIVERSITY MEDICAL CENTER
COLLEGES and UNIVERSITIES Basic Sciences
REGIONAL CAMPUSES INDIANA and PURDUE
CLINICAL TEACHING CENTER

thoroughly familiar with the use of the system for the maintenance of his own professional skills. Ultimately, a great deal of the system will be immediately available to him from his office or home by way of a telephone link, with visual as well as audio communication. In this manner he is made a permanent member of the university family of lifetime medical scholars.

6. The Communications Network. a) Elements. Many of the elements of the communications network can become available in the near future. The use of conventional transportation and telephone or radio-telephone links would be relatively inexpensive and could be quite effective. When the university television system is developed to connect with the regional campuses, it could, as indicated, also carry the programs of the medical network. However, it is anticipated that very considerable support will become available for television and for computer links through P.L. 89–239.

b) Function of the Network Components. There are a number of ways in which the communications network could function to support this state-wide educational system. By conventional transportation the School of Medicine could distribute instructors and educational material of various kinds such as film strips with audio tapes, movies, and television tapes. By telephone and radio-telephone networks live conferences, seminars, and lectures can be presented, and these can be supplemented by previously distributed slides, movies, and other material. Two way communication is a feature of such conference circuits. A modern computer facility will allow many users to have immediate access through telephone connections to an enormous quantity of stored information which can be kept up-to-date by educators and experts especially assigned to this task. This would include the latest emergency treatment procedures, new information on drugs and poisons, the location of experts or special diagnostic and therapeutic facilities which might be needed on short notice, etc. The computer could compute a bibliography on any medical subject from the Medlars tapes of the National Medical Library and deliver this to a user at any point in the system which had a print-out device. Abstracts on selected subjects or even a complete paper could be delivered in this way if there was an urgent need for immediate presentation. It should be mentioned here that just the duplication of our medical library in its present state would cost about three million dollars. Programmed instruction and self-testing in a wide variety of medical subjects could be made available through the computer. By this means a student intern, or practicing physician at any point in the system and at a time convenient to himself, could get a completely private, objective evaluation of his state of knowledge on a particular medical subject, could take a programmed course of instruction appropriate to the state of his knowledge, and finally could test himself again to determine how well he had learned.

This communications network would serve medical undergraduates, interns, residents and physicians, whether generalists or specialists. It would also serve the allied health professions in the same manner as it would the physicians. In this connection it should be noted that the Indiana University School of Nursing already has well advanced plans for the establishment of nursing schools on the regional campuses which will make use of the University television network.

B. Aims of the New Concept

How will this state-wide system of medical education at all levels help to solve Indiana's medical problems? First, it will benefit undergraduate medical education. The system provides a wide variety of educational opportunities. Medical educators know that all medical students need not follow the same lock-step curriculum. Given a sound basic education, the student can devote special attention to the areas where his interest is greatest. He learns to educate himself, and the system is available for further education whenever he needs it. Because the system provides many teachers, it fosters intimate student-teacher contact for a large student body. It eliminates conventional restrictions on the size of the class. The limitations under this system would be on the size of the second and third year classes at Indianapolis. These could be considerably larger than 200 if the first basic science year at the Medical Center were limited to 200 and most of the seniors spent at least six months outside Indianapolis. With the presently proposed facilities at Indianapolis, up to 270 students could be accommodated in each of the second and third years. The system would have great flexibility and could adjust immediately to changes in class size. This is possible because the bottleneck of undergraduate basic science facilities is eliminated and the requirement for a large patient supply can be shared with participating hospitals.

Above all, this system allows the senior student to become familiar with the advantages of medical practice in this state. It will help retain physicians in Indiana.

The benefits of the system for internship and residency programs in community hospitals over the state must be emphasized. The teaching affiliation of community hospitals, the educational programs which will be offered, and the opportunities for rotation through other hospitals in the network, including the University hospital in

Indianapolis, should greatly increase the attractiveness of these graduate training positions. Strengthening internships and residencies over the state will help retain physicians in Indiana.

Benefits for continuing medical education will also inevitably develop. The system will provide convenient access to comprehensive, up-to-date programs of continuing medical education. It will provide the stimulus of a teaching environment for a large number of the state's physicians, and those who help to operate the system will have the additional stimulation to learning which comes from taking on teaching responsibilities. The system will also offer a useful medical information service. The total effect will create a most attractive medical environment which will help retain physicians in Indiana.

The benefits for the allied health professions are similar to those for medicine. Physicians are greatly concerned with the education of personnel in the allied health professions. These individuals now out-number physicians 9:1, and they are absolutely essential to modern health care.

For all health personnel the system can provide lifetime continuity in professional education. It is a medical school without walls, both in space and in time.

C. Central Facility of Educational Leadership Serving the Medical Community of the State

For the creation of this state-wide system of medical education it is an absolute requirement that Indiana University Medical Center be allowed to complete its development as a strong facility for educational leadership. The Medical School will be essential for teaching the clinical core curriculum and the advanced basic science curriculum. When the system is fully developed the medical school will still be much the largest Indiana facility for teaching the basic science core curriculum and the advanced clinical curriculum. It will be the essential resource for the very large job of producing comprehensive programs of medical education at all levels on a continuing basis. It remains the greatest resource in the state for training medical specialists. Finally, it will be the primary resource in the state for the development, perfection, and demonstration of new diagnostic and treatment procedures. The entire system depends upon the strength of the medical school, and the firm establishment of that strength should be the first move in the creation of the system.

APPENDIX H

*A Complete Listing of Medical Schools in the United States**

State	Medical School	Year Organized	Public or Private	Enroll-ment 1967	Graduates			
					1967	1957	1947	1937
Ala.	Medical School of Alabama, *Birmingham*	1859	Pub.	320	74	71	61	(a)
Arkansas	University of Arkansas School of Medicine, *Little Rock*	1879	Pub.	371	87	77	t 108	61
Calif.	Loma Linda University School of Medicine, *Loma Linda, Los Angeles*	1909	Pri.	340	88	98	90	80
	University of California, *Irvine* California College of Medicine	1962	Pub.	318	87	....	....	....
	University of California School of Medicine, *Los Angeles*	1951	Pub.	299	68	36	....	....
	University of Southern California School of Medicine, *Los Angeles*	1885	Pri.	279	71	68	66	46
	Stanford University School of Medicine, *Palo Alto*	1908	Pri.	313	48	57	t 121	53
	University of California School of Medicine, *San Francisco*	1864	Pub.	489	101	74	t 135	47
Colo.	University of Colorado School of Medicine, *Denver*	1883	Pub.	340	84	70	55	48
Conn.	Yale University School of Medicine, *New Haven*	1812	Pri.	324	73	80	63	47
D.C.	Georgetown University School of Medicine, *Washington*	1851	Pri.	449	106	114	89	117
	George Washington University School of Medicine, *Washington*	1825	Pri.	405	96	88	79	59
	Howard University College of Medicine, *Washington*	1868	Pri.	417	98	72	t 126	35
Fla.	University of Miami School of Medicine, *Coral Gables*	1952	Pri.	312	69	34	....	....
	University of Florida College of Medicine, *Gainesville*	1956	Pub.	236	59	....	....	....
Ga.	Emory University School of Medicine, *Atlanta*	1854	Pri.	280	64	74	55	55
	Medical School of Georgia, *Augusta*	1828	Pub.	386	92	78	66	33
Ill.	Chicago Medical School, *Chicago*	1912	Pri.	282	66	66	(a)	(a)
	Northwestern University Medical School, *Chicago*	1859	Pri.	536	136	126	156	139
	Loyola University, Stritch School of Medicine, *Chicago*	1915	Pri.	338	76	82	76	106
	University of Chicago School of Medicine, *Chicago*	1927	Pri.	297	71	69	62	70
	University of *Chicago*, Rush Medical School	1837	Pri.	(a)	(a)	(a)	(a)	289
	University of Illinois College of Medicine, *Chicago*	1881	Pub.	765	179	146	325	137
Ind.	Indiana University School of Medicine, *Indianapolis*	1903	Pub.	865	182	139	98	97
Iowa	University of Iowa College of Medicine, *Iowa City*	1869	Pub.	492	114	97	74	80
Kansas	University of Kansas School of Medicine, *Kansas City*	1880	Pub.	447	103	107	73	69
Kentucky	University of Kentucky College of Medicine, *Lexington*	1954	Pub.	277	60	....	....	....
	University of Louisville School of Medicine, *Louisville*	1837	Pri.	364	84	90	87	89

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* From *Fact Sheet on Physician Population and Medical Education in the U. S.*, American Medical Association, March, 1968.

APPENDIX H Continued

State	Medical School	Year Organized	Public or Private	Enrollment 1967	Graduates 1967	1957	1947	1937
La.	Louisiana State University School of Medicine, *New Orleans*	1931	Pub.	516	125	96	75	43
	Tulane University School of Medicine, *New Orleans*	1834	Pri.	513	128	124	125	113
Md.	Johns Hopkins University School of Medicine, *Baltimore*	1893	Pri.	367	89	67	79	63
	University of Maryland School of Medicine, *Baltimore*	1807	Pub.	489	107	94	97	114
Mass.	Boston University School of Medicine, *Boston*	1873	Pri.	288	62	69	57	56
	Harvard Medical School, *Boston*	1782	Pri.	539	150	145	131	139
	Tufts University School of Medicine, *Boston*	1893	Pri.	445	108	113	103	117
Mich.	University of Michigan Medical School, *Ann Arbor*	1850	Pub.	780	182	186	140	95
	Wayne State University School of Medicine, *Detroit*	1885	Pub.	586	98	65	62	85
Minn.	University of Minnesota Medical School, *Minneapolis*	1883	Pub.	667	156	109	109	125
Miss.	University of Mississippi School of Medicine, *Jackson*	1903	Pub.	300	68	24	(a)	(a)
Mo.	University of Missouri School of Medicine, *Columbia*	1845	Pub.	332	76	21	(a)	(a)
	St. Louis University School of Medicine, *St. Louis*	1901	Pri.	439	97	112	130	122
	Washington University School of Medicine, *St. Louis*	1842	Pri.	330	76	93	97	94
Neb.	Creighton University School of Medicine, *Omaha*	1892	Pri.	285	69	69	55	59
	University of Nebraska College of Medicine, *Omaha*	1881	Pub.	341	75	77	77	87
N.J.	New Jersey College of Medicine & Dentistry, *Jersey City*	1956	Pub.	303	66	....	....	....
N.Y.	Albany Medical College of Union University, *Albany*	1838	Pri.	249	56	49	43	21
	State University of New York at *Buffalo* School of Medicine	1846	Pub.	387	95	65	t 147	58
	Columbia University College of Physicians & Surgeons, *New York*	1767	Pri.	472	116	114	113	94
	Cornell University Medical College, *New York*	1898	Pri.	338	83	86	83	71
	Albert Einstein College of Medicine of Yeshiva University, *New York*	1955	Pri.	388	91	....	....	....
	New York Medical College, *New York*	1858	Pri.	494	117	109	112	89
	New York University School of Medicine, *New York*	1841	Pri.	479	117	127	120	139
	State University of New York College of Medicine, Downstate Medical Center, *Brooklyn*	1858	Pub.	754	160	145	95	81
	University of Rochester School of Medicine & Dentistry, *Rochester*	1925	Pri.	276	66	65	66	35
	State University of New York College of Medicine, Upstate Medical Center, *Syracuse*	1872	Pub.	391	93	63	t 84	40
N.C.	University of North Carolina School of Medicine, *Chapel Hill*	1890	Pub.	284	74	58	(a)	(a)

APPENDIX H Continued

State	Medical School	Year Organized	Public or Private	Enroll-ment 1967	Graduates			
					1967	1957	1947	1937
	Duke University School of Medicine, *Durham*	1930	Pri.	323	80	80	67	55
	Bowman Gray School of Medicine of Wake Forest College, *Winston-Salem*	1902	Pri.	214	51	55	38	(a)
Ohio	University of Cincinnati College of Medicine, *Cincinnati*	1819	Pub.	389	90	79	82	69
	Case Western Reserve University School of Medicine, *Cleveland*	1843	Pri.	360	82	73	79	61
	Ohio State University College of Medicine, *Columbus*	1914	Pub.	581	136	133	77	94
Okla.	University of Oklahoma School of Medicine, *Oklahoma City*	1900	Pub.	399	89	88	70	59
Oregon	University of Oregon Medical School, *Portland*	1887	Pub.	336	80	65	69	53
Pa.	Hahnemann Medical College of *Philadelphia*	1848	Pri.	428	104	97	132	121
	Jefferson Medical College of *Philadelphia*	1825	Pri.	663	161	165	151	138
	Temple University School of Medicine, *Philadelphia*	1901	Pri.	551	129	114	114	116
	University of Pennsylvania School of Medicine, *Philadelphia*	1765	Pri.	507	122	126	132	134
	Woman's Medical College of Pennsylvania, *Philadelphia*	1850	Pri.	204	37	40	35	23
	University of *Pittsburgh* School of Medicine	1886	Pri.	381	82	91	83	62
P.R.	University of Puerto Rico School of Medicine, *San Juan*	1949	Pub.	215	44	41	....	....
S.C.	Medical School of South Carolina, *Charleston*	1823	Pub.	308	80	74	50	45
Tenn.	University of Tennessee College of Medicine, *Memphis*	1876	Pub.	672	150	185	173	102
	Meharry Medical College School of Medicine, *Nashville*	1876	Pri.	234	50	53	t117	35
	Vanderbilt University School of Medicine, *Nashville*	1874	Pri.	206	48	53	43	51
Texas	University of Texas Southwestern Medical School, *Dallas*	1943	Pub.	401	96	91	t86	....
	University of Texas Medical Branch, *Galveston*	1890	Pub.	628	150	129	90	79
	Baylor University College of Medicine, *Houston*	1900	Pri.	361	79	90	71	78
Utah	University of Utah College of Medicine, *Salt Lake City*	1905	Pub.	237	52	57	35	(a)
Vermont	University of Vermont College of Medicine, *Burlington*	1822	Pub.	195	46	40	33	50
Virginia	University of Virginia School of Medicine, *Charlottesville*	1827	Pub.	295	69	75	67	61
	Medical College of Virginia, *Richmond*	1838	Pub.	375	78	95	83	82
Wash.	University of Washington School of Medicine, *Seattle*	1945	Pub.	315	79	72	....	....
W.Va.	West Virginia University School of Medicine, *Morgantown*	1902	Pub.	231	53	(a)	(a)	(a)
Wis.	University of Wisconsin Medical School, *Madison*	1907	Pub.	404	92	77	60	48
	Marquette University School of Medicine, *Milwaukee*	1912	Pri.	398	98	100	87	64
	SUBTOTALS			33,384	7,743	6,796	6,389	5,377

APPENDIX H Continued

State	Medical School	Year Organized	Public or Private	Enrollment 1967	Graduates 1967	Graduates 1957	Graduates 1947	Graduates 1937
	(Approved Schools of Basic Medical Sciences)							
N.H.	Dartmouth Medical School, *Hanover*	1797	Pri.	94	----	----	----	----
N.D.	University of North Dakota School of Medicine, *Grand Forks*	1905	Pub.	91	----	----	----	----
S.D.	University of South Dakota School of Medicine, *Vermillion*	1907	Pub.	88	----	----	----	----
	(Developing Medical Schools—Operational)							
*N.M.	University of New Mexico School of Medicine, *Albuquerque*	1960	Pub.	66	----	----	----	----
**N.J.	Rutgers, State University	1965	Pub.	16	----	----	----	----
	TOTALS			***33,739	7,743	6,796	6,389	5,377

(a) Prior to World War II, these schools were limited to two-year clinical work.

ᵗ Figures are for two graduating classes and include senior students reported in 1946 educational number.

* Admitted first students in September, 1964.

** Admitted first students in September, 1966.

*** Includes 316 part-time and special students.

Prior to 1949, the Chicago Medical School was not an approved school.

West Virginia did not have a graduating class until 1962. Prior to that time, it was a two-year school.

Appendix I

Table 1.—Approved Medical Schools and Schools of Basic Medical Sciences

State	No.	Medical Schools	Ownership	Year Organized	Tuition: Resident	Tuition: Nonresident	Students by Classes, 1966-1967 (Full-Time, Part-Time, and Special Students Included): 1st Yr	2nd Yr	3rd Yr	4th Yr	Total	Part-Time and Special Students	Graduates 7/1/66 to 6/30/67	Dean	
Ala	1	Medical College of Alabama, Birmingham	Pub	1859	710	1,110	81	78	77	76	312	8	74	S. Richardson Hill, MD	1
Ark	2	University of Arkansas School of Medicine, Little Rock	Pub	1879	515	1,015	106	90	87	87	370	1	87	Winston K. Shorey, MD	2
Calif	3	Loma Linda University School of Medicine, Loma Linda, Los Angeles	Pri	1909	1,700	1,700*	86	81	84	88	339	1	88	David B. Hinshaw, MD	3
	4	University of California, Irvine California College of Medicine	Pub	1962	495	1,045*	64	78	89	87	318	0	87	Warren L. Bostick, MD	4
	5	University of California School of Medicine, Los Angeles	Pub	1951	480	1,032†	82	72	77	68	299	0	68	Sherman M. Mellinkoff, MD	5
	6	University of Southern California School of Medicine, Los Angeles	Pri	1885	1,725	1,725*	69	70	69	71	279	0	71	Roger O. Egeberg, MD	6
	7	Stanford University School of Medicine, Palo Alto‡	Pri	1908	1,575	1,575*	66	130	62	48	306	7	48	Robert J. Glaser, MD	7
	8	University of California School of Medicine, San Francisco	Pub	1864	495	970†	130	125	133	101	489	0	101	Stuart C. Cullen, MD	8
Colo	9	University of Colorado School of Medicine, Denver	Pub	1883	700	1,100†	86	81	89	84	340	0	84	John J. Conger, PhD	9
Conn	10	Yale University School of Medicine, New Haven	Pri	1812	1,600	1,600	79	80	86	75	320	4	73	Frederick Redlich, MD	10
DC	11	Georgetown University School of Medicine, Washington	Pri	1851	1,650	1,650	115	117	111	106	449	0	106	John C. Rose, MD	11
	12	George Washington University School of Medicine, Washington	Pri	1825	1,700	1,700	109	96	104	96	405	0	96	John L. Parks, MD	12
	13	Howard University College of Medicine, Washington	Pri	1868	1,060	1,060	111	98	92	100	401	16	98	K. Albert Harden, MD	13
Fla	14	University of Miami School of Medicine, Coral Gables	Pri	1952	1,400	1,400	86	80	77	69	312	0	69	Hayden C. Nicholson, MD	14
	15	University of Florida College of Medicine, Gainesville	Pub	1956	600	1,200	64	57	56	59	236	0	59	Emanuel Suter, MD	15
Ga	16	Emory University School of Medicine, Atlanta	Pri	1854	1,500	1,500	78	72	66	64	280	0	64	Arthur P. Richardson, MD	16
	17	Medical College of Georgia, Augusta	Pub	1828	750	. . .	103	94	94	92	383	3	92	Walter G. Rice, MD	17
Ill	18	Chicago Medical School, Chicago	Pri	1912	1,875	1,875	75	68	71	68	282	0	66	LeRoy P. Levitt, MD	18
	19	Northwestern University Medical School, Chicago	Pri	1859	1,860	1,860	138	124	137	137	536	0	136	Richard H. Young, MD	19
	20	Loyola University, Stritch School of Medicine, Chicago	Pri	1915	1,700	1,700	89	89	83	77	338	0	76	John F. Sheehan, MD	20
	21	University of Chicago School of Medicine, Chicago	Pri	1927	1,710	1,710	73	67	68	72	280	17	71	Leon O. Jacobson, MD	21
	22	University of Illinois College of Medicine, Chicago	Pub	1881	450§	1,125§	200	194	189	182	765	0	179	Granville A. Bennett, MD	22
Ind	23	Indiana University School of Medicine, Indianapolis	Pub	1903	655	1,255	216	210	211	181	818	47	182	Glenn W. Irwin, Jr., MD	23
Iowa	24	University of Iowa College of Medicine, Iowa City	Pub	1850	520	1,070	123	124	126	114	487	5	114	Robert C. Hardin, MD	24
Kan	25	University of Kansas School of Medicine, Kansas City	Pub	1905	525	1,025	126	113	102	105	446	1	103	George Wolfe, Jr., MD	25
Ky	26	University of Kentucky College of Medicine, Lexington	Pub	1954	600	1,280	77	76	63	60	276	1	60	William S. Jordan, Jr., MD	26
	27	University of Louisville School of Medicine, Louisville	Pri	1837	1,025	1,525	97	89	93	84	363	1	84	Donn L. Smith, MD	27
La	28	Louisiana State University School of Medicine, New Orleans	Pub	1931	600	1,600	140	132	117	127	516	0	125	John Finerty, PhD	28
	29	Tulane University School of Medicine, New Orleans	Pri	1834	1,700	1,700	134	123	125	128	510	3	128	Oscar Creech, Jr., MD	29
Md	30	Johns Hopkins University School of Medicine, Baltimore	Pri	1893	2,000	2,000	96	92	89	89	366	1	89	Thomas B. Turner, MD	30
	31	University of Maryland School of Medicine, Baltimore	Pub	1807	750	1,050	129	128	122	107	486	3	107	William S. Stone, MD	31
Mass	32	Boston University School of Medicine, Boston	Pri	1873	1,700	1,700	72	70	81	63	286	2	62	Franklin G. Ebaugh, Jr., MD	32
	33	Harvard Medical School, Boston	Pri	1783	2,095	2,095	126	114	144	152	536	3	150	Robert H. Ebert, MD	33
	34	Tufts University School of Medicine, Boston	Pri	1893	1,710	1,710	114	112	111	108	445	0	108	William F. Maloney, MD	34
Mich	35	University of Michigan Medical School, Ann Arbor	Pub	1850	800	1,600	205	202	192	181	780	0	182	William N. Hubbard, Jr., MD	35
	36	Wayne State University School of Medicine, Detroit	Pub	1885	750	1,500	145	143	128	100	516	70	98	Ernest D. Gardner, MD	36
Minn	37	University of Minnesota Medical School, Minneapolis	Pub	1883	585	1,221	166	157	159	161	643	24	156	Robert B. Howard, MD	37
Miss	38	University of Mississippi School of Medicine, Jackson	Pub	1903	750	1,150	85	77	68	68	298	2	68	Robert E. Carter, MD	38
Mo	39	University of Missouri School of Medicine, Columbia	Pub	1840	500	1,000	86	89	75	76	326	6	76	William D. Mayer, MD	39
	40	Saint Louis University School of Medicine, St. Louis	Pri	1903	1,800	1,800	121	108	113	97	439	0	97	Robert H. Felix, MD	40
	41	Washington University School of Medicine, St. Louis	Pri	1899	1,890	1,890	89	81	82	77	329	1	76	M. Kenton King, MD	41
Neb	42	Creighton University School of Medicine, Omaha	Pri	1892	1,600	1,600	78	74	62	69	283	2	69	Richard L. Egan, MD	42
	43	University of Nebraska College of Medicine, Omaha	Pub	1881	650	1,300	87	81	94	77	339	2	75	Cecil L. Wittson, MD	43
NJ	44	New Jersey College of Medicine and Dentistry, Jersey City	Pub	1956	750	1,000	86	79	71	67	303	0	66	Rulon W. Rawson, MD	44
NY	45	Albany Medical College of Union University, Albany	Pri	1839	1,700	1,700	62	67	64	56	249	0	56	Harold C. Wiggers, PhD	45
	46	State University of New York at Buffalo School of Medicine	Pub	1846	849‖	1,049	100	97	94	96	387	0	95	Douglas M. Surgenor, PhD	46
	47	Columbia University College of Physicians and Surgeons, New York	Pri	1767	1,965	1,965	126	118	112	116	472	0	116	H. Houston Merritt, MD	47
	48	Cornell University Medical College, New York	Pri	1898	1,800	1,800	84	84	87	83	338	0	83	John E. Deitrick, MD	48
	49	Albert Einstein College of Medicine of Yeshiva University, New York	Pri	1955	1,700	1,700	104	94	99	91	388	0	91	Harry H. Gordon, MD	49
	50	New York Medical College, New York	Pri	1860	1,810	1,810	134	120	122	118	494	0	117	J. Frederick Eagle, MD	50
	51	New York University School of Medicine, New York	Pri	1841	2,000	2,000	120	120	121	117	478	1	117	Lewis Thomas, MD	51
	52	State University of New York College of Medicine, Downstate Medical Center, Brooklyn	Pub	1860	800‖	1,000	209	186	198	161	754	0	160	Joseph K. Hill, PhD	52

	53	University of Rochester School of Medicine and Dentistry, Rochester	Pri	1920	1,802	1,802	74	67	69	65	275	1	66	James Lowell Orbison, MD	53
	54	State University of New York College of Medicine, Upstate Medical Center, Syracuse	Pub	1834	845	1,045	107	93	98	93	391	0	93	Julius B. Richmond, MD	54
NC	55	University of North Carolina School of Medicine, Chapel Hill	Pub	1879	656	1,331	71	71	68	74	284	0	74	Isaac M. Taylor, MD	55
	56	Duke University School of Medicine, Durham	Pri	1930	1,612	1,612	82	77	80	84	323	0	80	William G. Anlyan, MD	56
	57	Bowman Gray School of Medicine of Wake Forest College, Winston-Salem	Pri	1902	1,500	1,500	56	54	54	50	214	0	51	Manson Meads, MD	57
Ohio	58	University of Cincinnati College of Medicine, Cincinnati	Pub	1819	1,215#	1,350	100	100	97	91	388	1	90	Clifford G. Grulee, Jr., MD	58
	59	Case Western Reserve University School of Medicine, Cleveland	Pri	1843	1,560	1,560	91	90	87	83	351	9	82	Frederick C. Robbins, MD	59
	60	Ohio State University College of Medicine, Columbus	Pub	1914	735	1,230	155	146	142	138	581	0	136	Richard L. Meiling, MD	60
Okla	61	University of Oklahoma School of Medicine, Oklahoma City	Pub	1900	500	1,000	106	107	96	90	399	0	89	James L. Dennis, MD	61
Ore	62	University of Oregon Medical School, Portland	Pub	1887	705	1,113†	90	81	83	82	336	0	80	David W. E. Baird, MD	62
Pa	63	Hahnemann Medical College of Philadelphia	Pri	1848	1,427	1,427	110	108	103	106	427	1	104	Joseph Di Palma, MD (Actg.)	63
	64	Jefferson Medical College of Philadelphia	Pri	1825	1,367	1,367	176	169	157	161	663	0	161	William F. Kellow, MD	64
	65	Temple University School of Medicine, Philadelphia	Pri	1901	490	1,490	139	133	147	132	551	0	129	Robert M. Bucher, MD	65
	66	University of Pennsylvania School of Medicine, Philadelphia	Pri	1765	1,850	1,850	126	126	128	122	502	5	122	Samuel Gurin, PhD	66
	67	Woman's Medical College of Pennsylvania, Philadelphia	Pri	1850	1,350	1,350	64	63	38	39	204	0	37	Glen R. Leymaster, MD	67
	68	University of Pittsburgh School of Medicine	Pri	1883	1,500	1,500	107	96	95	83	381	0	82	Francis S. Cheever, MD	68
Puerto Rico	69	University of Puerto Rico School of Medicine, San Juan	Pub	1949	500	500	63	58	50	44	215	0	44	Jose E. Seifontes, MD	69
SC	70	Medical College of South Carolina, Charleston	Pub	1823	643	1,143	82	78	67	81	308	0	80	F. C. Fetter, MD	70
Tenn	71	University of Tennessee College of Medicine, Memphis	Pub	1851	689	1,064	198	181	143	150	672	0	150	Maston Kennerly Callison, MD	71
	72	Meharry Medical College School of Medicine, Nashville	Pri	1876	1,011	1,011	84	49	51	50	234	0	50	Lloyd C. Elam, MD (Interim)	72
	73	Vanderbilt University School of Medicine, Nashville	Pri	1873	1,460	1,460	53	54	51	48	206	0	48	Randolph Batson, MD	73
Tex	74	University of Texas Southwestern Medical School, Dallas	Pub	1943	370	870	106	98	101	96	401	0	96	Charles Sprague, MD	74
	75	University of Texas Medical Branch, Galveston	Pub	1887	387	887	162	150	127	152	591	37	150	Truman G. Blocker, Jr., MD	75
	76	Baylor University College of Medicine, Houston	Pri	1900	1,400	1,400	85	94	86	79	344	17	79	James R. Schofield, MD	76
Utah	77	University of Utah College of Medicine, Salt Lake City	Pub	1905	660	1,050	67	64	54	52	237	0	52	Kenneth B. Castleton, MD	77
Vt	78	University of Vermont College of Medicine, Burlington	Pub	1822	620	1,570	56	47	46	46	195	0	46	Edward Clinton Andrews, Jr., MD	78
Va	79	University of Virginia School of Medicine, Charlottesville	Pub	1825	712	1,352	79	75	72	69	295	0	69	Kenneth R. Crispell, MD	79
	80	Medical College of Virginia, Richmond	Pub	1838	845	1,235	112	102	83	78	375	0	78	Kinloch Nelson, MD	80
Wash	81	University of Washington School of Medicine, Seattle	Pub	1945	570	1,095†	77	74	85	79	315	0	79	John R. Hogness, MD	81
W Va	82	West Virginia University School of Medicine, Morgantown	Pub	1902	400	1,086	62	56	59	54	231	0	53	Clark K. Sleeth, MD	82
Wis	83	University of Wisconsin Medical School, Madison	Pub	1907	608	1,422	103	95	103	94	395	9	92	Peter L. Eichman, MD	83
	84	Marquette University School of Medicine, Milwaukee	Pri	1913	1,500	1,500	106	98	90	100	394	4	98	Gerald A. Kerrigan, MD	84
		Subtotals					8,776	8,355	8,136	7,801	33,068	316	7,743		
		Approved Schools of Basic Medical Sciences													
NH	1	Dartmouth Medical School, Hanover	Pri	1797	1,925	1,925	50	44	...	...	94	0	...	Carlton B. Chapman, MD	1
ND	2	University of North Dakota School of Medicine, Grand Forks	Pub	1905	410	860	47	44	...	...	91	0	...	Theodore H. Harwood, MD	2
SD	3	University of South Dakota School of Medicine, Vermillion	Pub	1907	528	1,284	46	42	...	...	88	0	...	George W. Knabe, Jr. (Actg.)	3
		Subtotals					143	130	...	...	273				
		Totals					8,919	8,485	8,136	7,601	33,341		7,743		
		Developing Medical School-Operational (Not yet eligible for approval)													
NM	1	University of New Mexico School of Medicine, Albuquerque††	Pub	1960	600	1,200	29	18	19	...	66	0	...	Reginald H. Fitz, MD	1
NJ	2	Rutgers, State University§§	Pub	1965	750	1,000	16	...	...	...	16	0	...	DeWitt Stetten, MD	2
		Totals					8,964	8,503	8,155	7,801	33,423	316	7,743		

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†Residents of Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, and Wyoming who enroll under the Western Interstate Commission for Higher Education's student exchange program will pay the standard resident tuition.

*Residents of Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, and Wyoming who enroll under the Western Interstate Commission for Higher Education's student exchange program receive a substantial reduction in tuition.

§Fourth-year $600 resident; $1,500 nonresident.

‖Under the state's current scholarship program tuition for residents may be waived or substantially reduced in relation to financial need.

#Residents of Cincinnati $900.

‡The entering students of Stanford's 5-yr program are included as first-year students; the second and third year are combined as second-year students; the students in the final (fifth) year are listed as fourth-year students, and those in the next-to-last (fourth) year as third-year students.

**Bi-annual admission.

††Admitted first students in September 1964.

§§Admitted first students in September 1966.

MINORITY REPORT ON MEDICAL EDUCATION

Foreword

The medical establishment serving the United States is in scope so vast—so overwhelming in its physical dimensions and in the sheer size of its financial requirements—that one is, at first exposure, inclined to disbelieve its statistics.

Looked at apart from its educational components—which will be dealt with at length in the exhibits assembled in this volume—it is a health services industry which provided, when the last census was taken eight years ago, direct employment for 2.6 million people. In addition, it was responsible in its peripheral and service industries for the employment of at least a million more. It was, therefore, already in 1960 the third largest industrial employer—exceeded only by agriculture and construction. And in view of the fact that it has for a decade experienced a rate of growth far more rapid than that for any industry of comparable size anywhere, it will in all probability attain by the middle of the next decade dimensions that will dwarf every other segment of our economy.

It is no less awesome in its financial requirements. In 1967 the Association of American Medical Colleges asserted that Americans were paying in funds of all types fifty billion dollars per year for health care. Expressed in more comprehensible arithmetic, the figure reduces to $137,000,000 per day. And no observer familiar with the rate of escalation of medical costs—particularly in the years since the inception of Medicare—will for a moment believe that figures so recent as those for last year are relevant today, or will have any meaning three or five years in the future.

The health service industry is equal in size and in insatiable demand for capital to the military establishment of the United States. But it has no Pentagon and no cabinet level representation for policy formulation. It has no self-awareness of its big industry status, no coordinated apparatus to provide it with management. It is parochial—part private, part municipal, part county or state or federal, of the utmost diversity in its labor policies, politically vulnerable, and disposed at times to take refuge against stubborn problems in a rowdy world by turning inward on itself—by asserting that no lay person can possibly understand its problems. It is inexorably, and at a rapidly accelerating rate, being transformed from a private enterprise rendering service for a private fee to a wholly public enterprise entirely dependent on public agencies for its investment capital and its operating expense. It is the very ultimate in growth industries; for there is no practical limit to the amount of health care people can consume, and there is no discernible limit to the complexity and cost of the apparatus that can be devised to serve them.

The situation in health care is thus not unlike the parallel situation in military hardware and personnel. How much health care and how much defense do we buy? How much is enough? There is no natural barrier that will in either case defend the state from ultimate destitution at the hands of the one or the other. Who will call a halt? Not, surely, a general in the first case; and we cannot reasonably expect doctors to do so in the second. We are in both cases faced with open-ended situations of such potential magnitude that failure to provide effective limitations would lead to disaster. Responsibility belongs clearly to "lay" authority.

The problems and frustrations exhibited by the health care industry are faithfully reflected in medical education; and it is therefore the obligation of the Coordinating Board, acting under a clear and unambiguous mandate, to subject medical education, in all of its aspects, to a searching examination.

On the national scale the medical educational complex consisted in 1967 of ninety-nine schools of all kinds, together, in some cases, with associated hospital and clinical facilities and training facilities for paramedical personnel. They are all post-Flexner schools in the sense that they have made a determined effort, prodded from time to time by the accreditation bodies of the American Medical Association, to restore to medicine, as they teach it, the dignity of a learned profession and so to erase the stigma of medical technology or worse which it had enjoyed in the last century. But with a few conspicuous exceptions—mostly urban situations where strong academic and clinical centers are contiguous—the schools, as noted in the exhibits below, are freestanding. And because they are to one degree or another isolated from academic support, or isolate themselves by inbred attitudes toward university participation, they tend to be oriented less toward medical science than toward intensive instruction in clinical procedures with enough science background to secure accreditation. In other words, they tend to be what is known in the trade—in the pejorative sense—as hospital schools.

Texas has four medical schools. One of these—Baylor—

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is private in ownership and management, although its financial support is derived in great part from public, albeit federal, sources. The three public ones, located in Galveston, Dallas, and San Antonio, make up the medical and quasi-medical components of The University of Texas.

All of these institutions are university-affiliated in the sense that, in every case, the parent university exercises control of the medical unit either by means of a single board common to both (University of Texas) or a separate board serving as the University's governing instrument for medical affairs only (Baylor).

All of them, therefore, are university-affiliated in administrative apparatus alone. And since, in all cases, the medical schools are located at a distance from the seat of operations of the parent university, all of them fall short of meeting the criterion laid down by the American Association of Medical Colleges for new medical schools—that they "should be established as integral parts of mature universities with well-established graduate programs" and not as "hospital schools."

Each of them has assumed its present format as a progressive response to a variety of adverse conditions; and each of them represents a compromise. It would be ungenerous, and for the most part unfactual, to imply that the people who planned and implemented them over the years have done less than well with what was available to them. But it would be equally ungenerous and equally wide of the mark to resort in descriptions of these schools to Texas bravado and call them the biggest and the best that the world affords. Such thinking obscures the fact that, whatever they have accomplished, they can accomplish more—and that the road to "quality second to none" does not lie in the direction of perpetuating the errors of concept that have made the task confronting the management of these schools very difficult indeed.

All of them are, in concept and to a large degree in operation, freestanding hospital schools. They belong, insofar as their efforts are directed toward science as distinguished from technology, to the world before quantum electro-dynamics. They are the embodiment of a philosophy of medicine which assigns primacy to clinical technology at the expense of science. In the words of Dr. Paul J. Sanazaro, Director of Education for the Association of American Medical Colleges, "the traditional medical school is a candidate for the museum, alongside the one-room schoolhouse, the Stanley Steamer, and the 'Spirit of St. Louis'."

Remarkably, there is almost no dissent in medical or university circles to the proposition that medical training and medical research both demand the fullest utilization of all of the resources of the modern university. Medical literature abounds with expressions to this effect that are no less forthright than that quoted above from Dr. Sanazaro. Dr. Charles C. Sprague, Dean of the Southwestern Medical School, quoted in the Summer 1968 edition of *Southwest Medical Foundation News,* states "it is our unquestioned obligation to understand as best we can all those environmental influences that affect . . . the physical and mental health of human beings. We recognize that medical education and our system of delivery of health care has reached a point where a departure from the traditional operation of each is now mandatory." The article continues, "While many academic disciplines have some relationships to broad aspects of health, the Dean listed 11 units that probably have closest relationships to the health sciences that will be included in Southwestern's program. . . . The University of Texas at Dallas plans to meet these needs by Ph.D. programs in mathematics, psychology, physics, medical basic sciences, chemistry, bioengineering, biology, information sciences, anthropology, medical economics and political science, and sociology." Add to this the substance of discussions freely presented to the Coordinating Board's sub-committee by other Deans of The University of Texas System on the subject of the "great medically-oriented multiversity" which they feel should be built in Houston, and the substance of the LeMaistre Report (q.v., Appendix B) and the picture of what —exactly—is planned for Texas becomes astonishingly clear.

The proposals before us would create yet another "hospital school" in the Texas Medical Center in Houston, preserving the same out-of-date structure and format from which all good medical schools are seeking to extricate themselves. This, if indeed only this is sought by The University of Texas, is unworthy and without justification, and cannot lead toward "quality second to none". If this is not all they seek, and their intentions are in fact disclosed by their much-discussed medical multiversity in Houston and their Texas Life Sciences Center in Dallas—both to be broad-spectrum academic institutions with doctoral programs in many areas of subject matter—then we face the prospect of the mountain indeed moved to Mohammed, of a university created for each medical school, of removing the stigma of obsolescence from each school by creating for the support of each an "instant Harvard." And there are no "instant Harvards"—even in Texas.

But we in Texas are not without educational assets which will enable us, if we utilize them wisely and exhibit a mature grasp of our problem, to provide the quantity of medical education which we need, at a consistently rising level of quality. And we need not be—indeed, must not be—trapped by the open-ended and divergent nature of medical economics into policies from which there will be no retreat, and from which we will be able to extricate ourselves only by retrenchment and the admission of mediocrity.

Our state university, after almost a century of growth and great expenditure of effort and money, is an institution of distinction in all of the areas of knowledge relevant to medicine. In no academic field does it enjoy greater eminence than in what we loosely describe as the "life sciences." But, difficult as it is to understand, it is now, and always has been, barred from participation in medicine; and the result of this peculiar decision has been twofold: a weakness in the educational scope of the university itself and a useless burden on the detached medical schools which have been compelled to shift for themselves in providing, through duplication and in spite of numerous handicaps, the minimum scope of instruction in science required for their accreditation. "Quality second to none" suffers on both counts.

It must be evident to all observers, as it was to the Board's staff and consultants, that "quality second to none" will remain a dream until The University of Texas can deploy its great academic resources in support of medical education. By the same token, any "solution" of the Texas medical problem which ignores or makes less than maximum use of the university's great potential in the medical field must respond to the charge that it is inadequate if not tendentious.

An impartial inventory of educational assets in Texas discloses the fact that the state is rich in both academic and clinical facilities. It has, in addition to its state university in Austin, public institutions in Houston and in Lubbock which are moving rapidly toward major university status. In the not distant future they will be ready to support expansion into medical education. Alternatively, it has in Houston's Texas Medical Center a wealth of clinical material; and while the rich variety of material to be found there tends to overshadow clinical facilities elsewhere, there are, nonetheless, well-planned and expanding clinical institutions in Amarillo, Big Spring, and Midland in West Texas; in Temple and Austin in Central Texas; and in Dallas, Galveston and San Antonio in support of the medical schools located there.

The most striking thing about this inventory is not its richness and variety but its geographical distribution. Texas, unlike the urban centers on both coasts, does not present a single case of a strong university base, mature or in development, that is adjacent and in immediate proximity to a large hospital concentration. Realization of this fact and its consequences is basic and must be given full consideration if Texas ever is to have medical education of the first quality.

Texas suffers from the arbitrary imposition upon its educational institutions of concepts which evolved in eastern urban centers and obviously are not adaptable to Texas conditions. Nowhere is this fact more clearly illustrated than in the rigid and unyielding attitude among medical people that all education, if it is to receive their blessing, must be conducted in a single complex, under a single roof—embracing a mature and full spectrum university and all of the institutions and manifold apparatus that are relevant to the clinical training of doctors, to the education of paramedical personnel, to medical research, and to the delivery of patient care in all its forms.

All of these things we have in abundance. And everything that is accomplished in urban medical centers we can accomplish if only we can rid ourselves of the stultifying idea that medical education, because it is a one-site operation in a few big cities, must also be a one-site operation in Texas—even if the mountain must come to Mohammed—even if we have to build a great urban center with all of its metropolitan attributes, in a Texas rice field, and so show the world that we can spend dollar for dollar with anybody. We probably can't.

We cannot make progress toward quality in medical education until we have a medical school at The University of Texas. We will dissipate our resources ineffectively as long as we continue to build "hospital schools." The school proposed for Houston is premature. Its appropriateness must be re-examined at a later time in terms of the developing capability of the University of Houston. We must adopt, without reservation, the principle—so obviously relevant—that medical students, like all other mature and motivated students, can move from place to place. And we must abandon the confining pattern of thought which restricts us to hospital schools by implementing a general mobilization of our statewide medical resources, aided by electronic information storage and communication, in support of education or re-education, or of continuing education of every doctor and every technician everywhere. Texas deserves no less.

VICTOR L. BROOKS
November 1, 1968

Minority Report of April 3, 1967

The April 3, 1967, minority report, read on behalf of five members present and one absent, was as follows:

> On December 12 of last year the Coordinating Board formally resolved to seek funds to implement "an intensive study of the medical needs of Texas." As Mr. Scruggs has reminded you, now, four months later, no study meeting the specifications of the one the Board deemed essential for the discharge of its responsibilities has been made. The informational base to justify decisions of far-reaching effect is still lacking.

The Board does not propose to *research* the question of physician need. The need is real and apparent and it is not a matter of contention. The Board, however, cannot quantify the extent of the present emergency or point to the emergency itself—real or imaginary—to justify steps which may have vast long-range significance.

Our purpose is to foster and maintain quality in education in Texas. But the Board is by no means certain that the policy now operative of building large freestanding medical schools was inspired by any consideration except an understandable desire to meet urgent needs as quickly and as painlessly as possible. There is abundant reason to believe that further application of this policy will mean for Texas a departure from the main stream of medico-educational thinking—with serious consequences in the quality of education obtained and in the total cost in money and effort which we shall be called upon to invest in its pursuit.

The research in depth which the Board wished to sponsor would therefore have been directed toward solutions of problems which are so basic to all higher education and to medical education in particular that all attempts to formulate and implement a master plan must be held in abeyance until the results are in hand.

First is the problem of the relationship of the professional school, and particularly of the medical school, to the rest of the academic community. The freestanding unit is education *in vacuo,* removed from participation in the intellectual life of the university and dedicated to the outworn idea that professional education is monolithic and complete within itself—with no need for association outside its rigid boundaries. This is, of course, nonsense. I quote from page 36 of *The Coggeshall Report:*

> Inevitably, new schools will be needed. Where they are established, a number of important guidelines should be followed. First and foremost, the new schools should be established as integral parts of mature universities with well-established graduate programs. They should not be established as "hospital schools." They should not be established as appendages to institutions of higher learning that are at a distance from them, are prepared to take but limited responsibility for setting or overseeing their standards of scholarship, or are themselves just developing programs in the sciences at the graduate level.

Relief from the rigidity of the freestanding format is sought in several ways. The most familiar, and certainly dubious in wisdom and dangerous in possible consequences, is the gambit of gathering to the medical school the academic services—engineering, law, sciences, liberal arts—of which it deprived itself by its initial isolation—so that a new university is created through proliferation (i.e., University of Alabama). Another is the device—now in disfavor in many circles—of dividing medical education into pre-clinical and clinical halves so that the portion of the curriculum concerned with mastery of the academic basis of medicine can be pursued in the free and unspecialized atmosphere of the universities. The idea is very much alive in medical literature and variations from it have become the subject of new and attractive proposals (i.e., the Indiana Plan). Yet another approach, which must surely command the respectful attention of everyone concerned with professional education, is to restore the medical school to the academic campus where it can resume its historical role as a major and in fact indispensable part of the university—for both the university and the medical school have been diminished by the ill-advised separation.

No Board can as of this moment respond with finality to the troublesome allegation that placement of a new medical school in the Texas Medical Center will impair and eventually destroy the medical school (Baylor) that already occupies the site. Neither can any Board give immediate assurance that the Medical Branch, because of its peculiar situation, will survive the establishment and expansion of a new school in Houston. No one, in short, can say now, on the basis of existing information, that establishment of a new medical school, in the wake of the painful experience in San Antonio, will not have the adverse effect of impairing existing private and public education with the result that the state will expend large sums with no commensurate increase in the number of practitioners available to it.

Establishment of a "medically oriented multiversity" in Houston must not be undertaken, to employ Dr. LeMaistre's word, capriciously. Such a multiversity, if it is in fact to embrace the entire gamut of academic services and so escape the stigma of academic isolation, will dominate the educational environment of its area. It will become The University of Texas at Houston. The Texas Medical Center will become The University of Texas Medical Center. It will duplicate services already rendered with distinction by the University of Houston. It will surely assume a posture of competition. And if under its existing board of governors it proves to be faultlessly correct in its attitude of cooperation, then at another time and under the aegis of other governors it will assert and give expression to its dominance with consequences surely grave for the development of its competing institutions—and to the destruction of the very concept of coordination.

Statement by Mr. Victor Brooks, Member, Coordinating Board

The Coordinating Board, once the legislative session had concluded, advised the Board's staff to proceed with study of medical education as a part of state long-range educational planning. Work also continued at the Board level and in September, 1967, the following study prepared by Mr. Brooks was presented for discussion:

MEDICAL EDUCATION AND COORDINATION

In December of last year the Coordinating Board, by unanimous resolution, set forth its intention to defer all decisions pertaining to medical education until additional information not then available to it could be compiled and abstracted for its use.

The Board's action was not capricious. It had before it many representations—some supported by documentation which had been assembled at considerable cost in money and effort—which expressed the conflicting claims of many interests to preferential consideration whenever awards of medical schools were to be made. Many of the claimants were local or regional groups; and, although they were diverse in other respects, each placed heavy emphasis on the geographical factor. Put in blunt terms, each felt that the flood of public money expended for medical education had either wholly or in part bypassed its community and that the aggregate size of its population, or its growth potential, or the extent of the institutional services it could offer—or all three together—rendered its claim unique and compelling. In addition to the local presentation was one of statewide scope prepared by the medical departments of The University of Texas setting forth a comprehensive plan to develop all public education in the medical field as an adjunct of that institution.

The Board welcomed all exhibits that were placed before it and gave due weight to every claim. But it was first and foremost conscious of its assigned responsibility to coordinate; and in its deliberations it addressed itself also to considerations of paramount importance which were neither expressed nor implied in any of the presentations.

One of these concerned the format of medical education—the almost mystical belief that the four-year free-standing structure of medical schools is beyond the boundary of legitimate discussion. Another concerned the effect that banishment of medical instruction to sites physically remote from the universities has had on the development of the universities themselves—as well as the medical schools. Still another was the faculty recruitment situation, which emerges as an insoluble riddle as long as university science departments must compete with medical schools for the same personnel. Still another was the effect of both format and placement of new medical schools on existing private institutions which are now carrying much of the medical (and dental) load without cost to the State of Texas. And, coloring all discussion and tending at times to overwhelm all orderly analysis, was the consideration and urgency—the stark fact that Texas has not enough doctors in practice, not enough doctors in training, not enough facilities in the planning stage, and no adequate excuse for the predicament with which it is now confronted.

The Board's unanimity with respect to the December resolution was in some part, at least, a response to the bewildering complexity of the medical problem. As regards any specific declaration of policy, it was not then and is not now unanimous. On some points of grave concern it is sharply divided—which would surely be true of any advisory body governed as this one is by a mature sense of its responsibility.

The problems to be surveyed are not separable so that they can be dealt with neatly one by one. But since some sort of sequence must govern this discussion, we shall begin with organizational structure.

Medical instruction—however it is organized—deals with two areas of sharply distinguished content. And in doing so, it must be designed to cope with two areas of divergent teaching methodology. These areas are clinical medicine and basic science.

Clinical medicine is the professional portion of the doctor's regimen. It is concerned with the application of what the student knows about medical science employed in an actual doctor-client atmosphere under a condition of tutorial instruction—usually with a student-teacher ratio of one-to-one. It is personalized, flexible, and responsive to the student's needs and the special directions his individual abilities may assume. It is probably the most expensive education we undertake in terms of cost per student. But it is effective where no compromise with quality can be tolerated. It can be carried on in any locality where clinical material is abundant and of the right kind. Faculty possessing the requisite professional qualifications can be obtained in many areas of Texas with minimal difficulty. Educational literature, which is critical of almost everything else, offers no valid criticism of the manner in which clinical medicine is taught, and on this point there is no division of opinion on the Board.

But primary to any instruction in clinical medicine is instruction in basic science—without which clinical training is a senseless exercise; and here the simple clarity of the situation vanishes. Modern medicine recognizes that the client cannot be separated from his environment. The object of medical attention is the client plus the total environment in which he lives. The heavy responsibility for the student's mastery of environment devolves in principal part upon basic science.

Much more than the traditional physiology and chemistry and anatomy is involved. At one time or another almost every resource of a major academic complex is engaged. Environmental science overflows all departmental barriers. The so-called disciplines blur one into another. What is involved is nothing less than the complete science of man.

It is in connection with the "complete science of man" that American instructional practice in medicine is seriously vulnerable. Our doctors—however thorough their grasp of clinical procedures—tend not to be "total environment oriented." If they are complete scientists, they have achieved that desirable end through postgraduate effort and have approached the goal more in spite of than as a result of their formal training. And candor requires us to admit that many of them fall short of the goal.

About these issues the Board is gravely concerned. It is concerned because the four-year, freestanding medical school is in this year 1967 an anachronism. It is a product of a past age when the concept of a complete science of man was too recondite to intrude on the sphere of public policy. Its structure tacitly assumes that it can be, and in fact is, complete in itself—a mystery to the uninitiated, a sanctum to the members of its order, secure from profanation, adequate within itself to face the gravest issues of life and death.

It is not any of these things. It is no less frail than the other institutions on which we depend for our well-being and our survival. Public policy must surely demand that it divest itself of its last pretense of monasticism and reunite itself with the mainstream of contemporary thinking.

Current educational practice in medicine, although there is a division of opinion on the issue, leans heavily in the direction of the four-year, freestanding format. Such a format presupposes that the basic science aspect of the school's responsibility is of manageable dimensions and can be discharged through suitable deployment of its resources in faculty and plant. In other words, whatever the nature of the science requirements of medical edcuation, however necessary it may become to augment the traditional areas with new ones which used to be *terra incognito* to doctors, however inexorable the demand may become for doctors grounded in the "complete science of man," the schools can still add more "science people" to take care of the situation.

Unhappily they cannot. Nearly all of the faculty recruitment problems which beset medical schools everywhere concern "science people." And for this there are at least two good reasons. An able scientist is endowed first of all with some degree or pride of calling. He cannot do his best work in an atmosphere where the things with which he is concerned lack status. He cannot be entirely content in any institution where all of the top echelons of the pecking order are occupied by doctors of medicine, and where the reminder—however subtle—always persists that he is "unfortunately not qualified." This is the way of the world; the status problem is inherent in the traditional medical arrangement. It cannot be eradicated by juggling administrative machinery. It will not go away if scientists are invited to sit on the board, or if legislatures are pressured into providing larger and larger appropriations.

No one suffers from the consequences of these suppressed resentments except the medical schools and the students they exist to serve. For such is the market for good scientists that not one of them must, for reasons of economic necessity, cast his lot with such a school. The medical school, with its built-in handicap, must, in a sellers' market, bid for his services against the universities and industry and government. Under the circumstances it must be recognized that the able scientists to be found in our medical schools are people of extraordinary dedication and deserve our commendation and gratitude.

The inherent incompatibility on the teaching level between the clinical and scientific aspects of medicine generates other problems. The entire medical regimen—like most areas of intellectual life—is in a constant state of flux. The superficial view that all fields of science are being overwhelmed by an accelerating accumulation of facts is, of course, false. Areas that were unmanageably complex a generation ago because they were understood only at lower conceptual levels have since emerged in beautiful and "elegant" simplicity. The process is continuous. In the areas where science relates to medicine—and almost all areas do so relate—the drive toward conceptual maturity is active and dynamic and full of all kinds of promise for beleaguered mankind. The totality of these sciences—the "basic science" of medical education—has become at least coequal with everything else in medicine, and the "basic" child promises to outgrow the "clinical" parent.

Our medical schools are not quite prepared for so fundamental a shift in attitude. They unconsciously resist the pretensions of basic science, and in so doing tend to understate still further the science aspect of the service they render. Thus schools faced with the shortage of science people, and the preference of the best scientists for employment elsewhere, tend to rationalize the lack by resorting to the comforting reminder that the science business isn't all that important anyway. Their business is medicine. But it is all that important.

The Coordinating Board has surveyed all of these considerations with some anguish. And it should occasion no surprise anywhere that a considerable segment, at least, of its membership have taken the position that effective discharge of the basic science responsibility in medical education can occur nowhere except in the universities. The scientists that the medical schools want but cannot get are mostly already on university faculties. Scientists and teachers that medical schools canot afford because their specialties are adjudged too remote from strictly interpreted medical requirements are also present on university faculties. Several of our universities are eminent in the majority of the medically related fields, and it is part of the Board's mandate to make them eminent in all. In every case the universities would be strengthened and their intellectual life enriched by the presence on their campuses of medical students. Relegation of basic science training to the universities would end the fragmentation of effort in the science fields; it would open the way for immediate expansion of medical training to satisfy the accelerating demand for physicians, and it would render practicable the establishment of clinical schools in many localities where hospital beds and teaching facilities abound but where the creation of a complementary science complex to render adequate support to quality medical education is all but impossible.

The decisions described above cannot be implemented without an examination of their impact on private education. In Texas private, freestanding, four-year schools are operated in Houston (medicine) and Dallas (dentistry) by Baylor University. The considerable budgetary outlay for these schools is met entirely from non-state sources. Each school has a long history of distinguished performance. It is understandable that the boards which govern them are sensitive to any proposal which will, in their opinion, place them in a nonviable position vis-a-vis a competing institution supported by public funds.

The most readily discernible challenge that would result from placement of a public school adjacent to a private one concerns tuition. As is the case in almost all privately supported schools of whatever subject matter, the Baylor schools must and do charge students tuition which is several times as great as that required of students in the tax-supported institutions. There is no doubt, then, that in competition with the public schools the private ones are at a disadvantage in competing for students. But historically the Baylor schools have not suffered from lack of availability of qualified students because for many years there has been a surplus of student body—and because a tacit understanding has existed that no public school will be placed so immediately adjacent to a private one as to threaten its existence.

Some of the proposals now before the Board would, if they were implemented by the legislature, destroy the existing working arrangement with the private schools. In fact, as they are interpreted by people responsible for operation of the private schools, the now-pending proposals are a deliberate and formidable ploy intended to destroy these institutions—and so to open the way for all health-related education to be incorporated in a single monolithic empire operated by the state university.

These fears are not entirely unjustified. The proposals submitted to the Coordinating Board and approved in part by it—and subsequently rejected by the legislature—would terminate the tacit understanding in regard to adjacency. A four-year, freestanding dental school would be established in Dallas where the Baylor dental school is located. A similarly conventional medical school would be erected in Houston within the confines of the Texas Medical Center, on a site adjoining the one occupied by Baylor Medical School.

These moves would indeed be a departure from custom and, if they inspired no other interpretations of sinister intent, would constitute a threat to which the private schools would certainly respond. But there are indeed concomitant circumstances that must be examined before the intensity of the private school response can be comprehended.

The concomitant circumstances are two in number, and they should be subjected to careful scrutiny.

Medical schools entail large expenditures—large even in terms of state budgets. It is therefore not surprising to discover that the church which operates the schools in question, notwithstanding its generosity, does not contribute a major segment of their operating budget. Funds on which the schools rely almost entirely for their existence are derived from private philanthropy. The schools are therefore acutely sensitive to any move from any quarter that could erode their position with respect to the individuals and private foundations from whom their income is derived. By almost any assessment they are vulnerable.

The heat sure to be generated by even a remote challenge to Baylor's sources of income was not dissipated in any degree by the representations made to the Coordinating Board on behalf of Texas University. Concurrence was requested in the two schools to which reference already has been made. And, in an atmosphere rendered uneasy by the recognition in all quarters that no medical school today can in fact be freestanding without the support of a major academic complex, the University authorities asked Board concurrence in the acquisition of no less than 100 acres of land located in close proximity to the Texas Medical Center—an acquisition which was to be made possible by two million dollars of private philanthropy. This request, together with a good deal of frank discussion of the Houston development as a "great medically oriented multiversity," insured, if nothing else did, that private and public interests in the field of education would be brought to collision.

There is precedent to support the view that the entry of Texas University into the Houston area as sponsor and operator of a four-year medical school would presage nothing less than the removal of that institution's principal seat of operations to Houston. Exactly that event has occurred at the University of Alabama where a medical unit was detached from the Tuscaloosa campus and implanted in Birmingham. The assigned reason was better access to necessary clinical material. But in fewer than ten years the Birmingham medical school has gathered to itself a "College of General Studies" which embraces the full range of academic subjects as well as engineering and law. Apprehension persists that a similar development is intended in Texas and that the driving power behind the move is in fact a maneuver in a three-way confrontation which will involve Baylor University, University of Houston, and University of Texas, with the ultimate prize "community support"—meaning access to the philanthropic money that the tax laws will certainly generate in so wealthy a community as Houston.

About a great deal of this the Coordinating Board has serious reservations. The projection of education into a patronage war of these dimensions, with the door left open to all sorts of political aggrandizement, is not and cannot be in the public interest. The Board has in general tried to form a consensus and to avoid involvement in controversies that will be harmful to education. But the controversy now is heated enough to involve us all—Board and Legislature and public alike. Some forthright expressions of policy must be forthcoming; and surely, in a situation where the educational problem, if only it can be dealt with in purely educational terms, can be so readily solved, the requisite expressions can be promulgated forcefully and can receive the required measure of public support to realize their objective.

Minority Recommendations

In consideration of the evidence before it, a minority of the Coordinating Board makes basic recommendations as follows:

1. *Entering enrollments in the existing public medical schools of The University of Texas should be steadily increased. Planning to include all requirements for such increases should be undertaken at once.*

The minority notes, first, that the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC), in a joint statement issued March 5, 1968, urge enrollment increases nationally as a matter of highest priority. In the words of their statement, "Considering the time required to create new schools and to provide a student with a medical education, there is no alternative to [increasing enrollment] in meeting our present emergency."

While consultants to the Coordinating Board do not recommend specific increases, they do generally agree that expansion of student enrollment is advisable. When asked the question, "Is there validity to the thesis that there is an ideal size for a medical school student body?" they responded as follows:

> Any answer to this question would be a matter of opinion. Certainly some schools appear to be functioning very effectively with a class size of 200. Others at least equally prestigious have limited their classes to 80 or less. It is the opinion of the consultants that once a class size gets much over 100 students per class, the relationship between the students and faculty tends to become less wieldy and more impersonal.

The minority finds no evidence elsewhere to indicate that an entering class of more than 100 students is either unwieldly or impersonal. As Appendix I shows, there is no "magic number" of freshmen in medical schools. First year enrollments ranged from 53 to 216 in 1966, and as of June 30, 1967, expansion grants had been awarded to 32 medical schools.

The Executive Vice-Chancellor for Health Affairs, The University of Texas System, reported on August 31, 1967, the schedule of expansion shown in Table I.

TABLE I

UNIVERSITY OF TEXAS PROJECTION OF FRESHMAN CLASS MEDICAL SCHOOL ENROLLMENT, 1967–1975, FOR TEXAS PUBLIC MEDICAL SCHOOLS

	Galveston	Dallas	San Antonio	Total
1968	158[a]	105	56	319
1969	163	125[b]	100	388
1970	163	125	100	388
1971	163	125	100	388
1972	163	125	100	388
1973	163	125	100	388
1974	163	125	100	388
1975	163	125	100	388

[a] 1967–1975 enrollment based upon commitment for construction under Health Professions Teaching Facility Construction Program.

[b] Enrollment based on additional basic and clinical science buildings, additional faculty, and additional clinic teaching beds at Parkland Memorial Hospital (all planned for).

The minority believes the program envisioned in Table I can and should be improved. Based on the opinion of our consultants, we would agree that the increase projected for Galveston should be accepted without substantial change. We believe, however, that the Dallas figures could move to 190 by 1975, not to the 125 shown in Table I; and that the San Antonio figures should move to 150 by 1975, not the 100 as shown.

Specifically, our belief and our recommendation is that planning be implemented to accomplish enrollments of first-year medical students in The University of Texas medical schools as shown below:

TABLE II

COORDINATING BOARD STAFF SUGGESTED PROJECTION OF FIRST-YEAR MEDICAL SCHOOL ENROLLMENT, 1967–1975, EXISTING TEXAS PUBLIC SCHOOLS

	Galveston	Dallas	San Antonio	Total
1967–68	158	105	56	319
1968–69	163	125	100	388
1972–73	165	155	125	445
1976–77	165	190	150	505
1980–81	175	225	175	575

Such an expansion would not make enrollments of existing schools unduly large, by comparison with enrollments and projected enrollments in respected medical schools elsewhere. Most importantly, expansion of the existing schools from 319 entering students in 1968 to 575 in 1975 will produce additional physicians in approximately one-half the time and at much less the cost required to gain this increase through the establishment of new schools.

2. *The Baylor College of Medicine in Houston should be encouraged to increase its entering class enrollment. Concomitantly, Baylor College of Medicine should be subsidized by the state for each bona fide Texas resident enrolled, the amount of subsidization per student to approximate the average annual basic institutional cost for a student at the public medical schools. Assistance should be provided to the college to raise the capital funds necessary for construction of the physical facilities to accommodate the added enrollments.*

In defense of this point, we call attention to Appendix A to this report, to Appendix D (J. R. Schofield, M.D., "Proposals to Increase Medical Education Enrollment Facilities in Texas"), and to Appendix E (Texas Attorney General's Opinion No. C-719, July 8, 1966).

These appendices indicate that Baylor medical school leaders are prepared to undertake the expansion, that such expansion would provide the least expensive and most rapidly achieved mechanism for increasing enrollment of Texas resident medical students in the Houston area, and that state financial assistance to a private institution such as Baylor medical school is legal and has precedent in Texas.

A combination of minority report recommendations 1 and 2 could result in the following enrollment patterns:

TABLE III

COORDINATING BOARD STAFF PROJECTION OF FIRST-YEAR MEDICAL SCHOOL ENROLLMENTS, 1967–1975, EXISTING TEXAS PUBLIC AND PRIVATE SCHOOLS

	Galveston	Dallas	San Antonio	Baylor	Total
1967–68	158	105	56	84	403
1968–69	163	125	100	84	472
1972–73	165	155	125	160	605
1976–77	165	190	150	160	665
1980–81	175	225	175	160	735

Thus, cooperative action as described above could, during the next 12 years, expand the entering enrollments of our existing Texas public and private medical schools by about 83 percent. The equivalent of a new medical school would be added in the Houston area; enrollments in the Dallas area would be doubled; and the San Antonio school would reach the capacity expected of a modern medical educational institution.

State assistance to Baylor's medical educational effort would not only increase student enrollments but would open a door to cooperative undertakings in research and in mutually-sponsored senior and special training ventures. On this point, consultants to the Coordinating Board noted:

> The consultants further recommend that the faculties of The University of Texas Medical System units in Galveston and Houston give serious consideration to the development of a joint effort in coordination with the Baylor Medical College whereby selected students from each institution may have the opportunity to participate in a mutually sponsored program in which selected hospitals in the Houston area are utilized for teaching clinical medicine with a primary emphasis on the modern concepts of Family Medicine.
>
> The consultants recognize that if these recommendations can be implemented, they will require intensive planning and a genuine and exceptional willingness to cooperate on the part of institutional governing bodies and faculties. Nevertheless, if this amalgamation of the interests of publicly and privately supported institutions were accomplished, it would provide a unique example of cooperation and an opportunity to maximize the productivity of the health related resources in the Houston area which unquestionably have an extraordinary potential.

3. *Recent action by The University of Texas Board of Regents to coordinate the activities of university health education units in the Houston-Galveston area is commendable. The Coordinating Board suggests that an additional step should be to unite the administration of several University of Texas medical and health education units in the Houston-Galveston area under a single authority, resident to the area; and that a vigorous coordinating council for area health education affairs should be established, involving The University of Texas, the Texas Medical Center, the Baylor University College of Medicine, the University of Houston, Rice University, the Harris County Medical Society, and appropriate hospital authorities.*

In the words of the consultants to the Coordinating Board:

> The consultants emphasize the extreme importance of coordinated, and if possible unified, planning for medical and health related education in the Houston-Galveston area. They recognize the difficulty in developing and implementing an effective planning structure which will include The University of Texas Medical Systems units in Houston and Galveston and the independent elements of the Texas Medical Center, in particular the Baylor University College of Medicine. Nevertheless, the consultants believe that this planning effort is imperative if the exceptional potential of the health related resources in the Houston-Galveston area is to be realized and future developments in this complex are not to prove destructive and wasteful.

In 1966, more than 2,600 students were at the Texas Medical Center, being trained and educated in at least thirty different levels within the health care professions. The twenty units of the Center then had a capital investment of almost $93 million. The Center's payroll included 2,414 faculty personnel and 11,455 other employees. In 1966 the Center accepted 1,003 research grants, reported 2,972 hospital beds available, and handled 854,025 patients in all categories. With all this vast outlay in health care facilities, both publicly and privately supported, the state is unable to utilize it fully and will not be able to do so unless and until it accepts a larger number of undergraduate medical students and arrives at a point where all units are coordinated in effort and goals.

4. *The quality production of physicians should be accepted as the primary role of our medical schools; medically related research and graduate work should be secondary roles; and efforts to build on medical school campuses doctoral programs in humanities, social sciences, and the physical sciences of chemistry, physics and mathematics should be brought to an end.*

One noteworthy development in medical education during the recent decades is that medical colleges have offered more and more non-MD academic programs in the basic medical sciences. The central goal stated for this development is to produce medical school faculty and research personnel for the medical profession. This endeavor has led to a second and more recent push—that being to add liberal arts and other graduate programs to the medical schools. The defense for this movement is that society has need for practitioners of these academic disciplines whose training in them is directly medically oriented. The University of Texas Southwestern Medical School at Dallas, for instance, has announced plans to design PhD programs in a variety of fields, including economics, mathematics, sociology and political science.

The minority is convinced that medical schools cannot duplicate an entire university spectrum, or any substantial portion thereof, except at an exorbitant cost to the state, with a wide deviation from the quality standards attached to the PhD degree generally,[1] and in open, unavoidable and wasteful program duplication.

It is also our firm opinion that when a medical school moves into PhD areas not normally or logically associated with medical education, it does so at the risk of detracting from the basic assignment of physician training. Our view here parallels that of Dr. F. J. L. Blasingame, executive vice-president of the American Medical Association, who said in April, 1968:

> Basic is the need for administrators and faculties of medical schools to return to the concept that the prime mission of the school is the education of medical students so that they can practice medicine.[2]

Consultants to the Coordinating Board "strongly endorse" the expansion of the medical school at Dallas into a "life science campus," but they add the qualifying note that such expansion should be "with appropriate interrelationships with higher educational institutions in the area." That is the precise point which the minority wishes to make: We hold that our state medical schools in Dallas, Houston and San Antonio, being removed as they are from The University of Texas main campus, must work out unequivocal arrangements with neighboring public and private universities and colleges to offer the academic support needed to disciplines not clearly, obviously and directly associated with the production of doctors.

5. *Plans to establish a new, four-year public school of medicine in the Houston area should not be implemented at this time but should be re-evaluated after 1974.*

The minority agrees with the recommendation of its consultants on this issue. These gentlemen make these comments:

> The consultants do not agree with the recommendations of The University of Texas Medical Systems Survey regarding the establishment of a new medical school in Houston at this time. They recommend that a definitive decision concerning this step be postponed and the proposal re-evaluated in five years. The impact of a new school in Houston on the Baylor Medical College developments and the proposed developments of The University of Texas Medical Branches at Galveston, Dallas, and San Antonio could then be better assessed without having seriously impeded the development of the state's total medical education resources.

In accepting this recommendation by the consultants, the minority would add that such acceptance is based on an enlargement of the Baylor University College of Medicine. If this enlargement, as proposed in our recommendation #2, is not undertaken, with appropriate funding, then we would return to our original position that a new state medical school is needed in the Texas Medical Center. The resources of the Center are too important to the State of Texas to be restricted to an educational unit of inadequate size and strength.

6. *The University of Texas should undertake a feasibility study leading to the establishment of a new medical school in Austin. This medical school should be established as an integral part of The University of Texas*

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[1] For a statement on Ph.D. standards, see Appendix F.

[2] F. J. L. Blasingame, "Physicians and the Marketplace," *JAMA* (April 8, 1968), 145.

Main Campus, should own and operate its own teaching and research hospital, and should weave its programs tightly with The University's comprehensive, nationally-famed graduate curricula.

As was the case concerning Recommendation #5, the minority here accepts the view of its consultants. They write:

> The consultants recommend that The University of Texas at Austin be given prime consideration as a site for a new medical school complex. The advantages of the location of a medical school on a strong university campus are undeniable. The University campus location is attractive to both students and faculty. Combinations of programs, both in teaching and research, amongst the several colleges on the university campus can be accommodated with considerable flexibility. Early enrollment of selected college students in medical school can be accomplished. Doctoral programs are enriched. An on-campus medical school offers an important resource to the university student health facility. If it is to be successful, its primary teaching hospital must be clearly identified as a University Hospital whose medical service responsibilities relate primarily and directly to the teaching and research programs of the university rather than to community health service needs. Inasmuch as Texas has not as of this date established a medical school on a university campus, and inasmuch as The University of Texas at Austin is by far the strongest comprehensive university base in the state, the concept of the Austin site has unique qualitative advantages.

The consultants further state, in reply to specific questions:

> In general, . . . the consultants agree that of the medical schools established in the last thirty years, the most successful appear to be located on the campus of a major university and accessible to a major population concentration. The university base appears to be important from the standpoint of recruiting and program flexibility. Indeed, in those instances where there is not a direct university connection, the medical school and the medical center move in the direction of becoming their own Medical University. In any event it is absolutely essential that the financial base is secure and substantial.
>
> If the medical school is not located on a university campus, it will in all likelihood develop its own broad academic base in the social sciences and allied health fields . . . it is not surprising that medical schools located on weak or less than comprehensive university campuses do not thrive, and those which are "freestanding" medical schools unassociated with a university, or those remote from parent universities, tend to develop the appurtenances of a university at their own medical center complexes.
>
> The consultants believe that improving the quality of education in the existing schools of The University of Texas Medical System should hold the highest priority before embarking on the initiation of additional schools. They are unanimous in their opinion that the progress of medical education in Texas has been inhibited by the fact that no school controls its major teaching hospital environment or is located on a comprehensive university campus.

The minority joins the consultants in their view and believes that a medical school on The University of Texas at Austin campus would offer the state a teaching and research unit with possibilities for unparalleled excellence. Such a medical school, if authorized by the Texas Legislature in 1969, could probably accept its first students by 1975.

7. *The Coordinating Board staff reaffirms its April 3, 1967, statement that it envisions for the future an innovative medical school to serve West Texas directly, with administrative control by the Texas Technological College in Lubbock. Such a medical school should be developed in partnership with the emerging medical center at Amarillo and with hospital authorities in Midland-Odessa, the basic concept being that the latter two cities would provide clinical and post-graduate (intern and resident) levels of physician training. The Coordinating Board staff suggests that such a regional medical education program be recommended for legislative implementation in 1971, with freshmen students to be enrolled in 1977. During the interim years, it is expected that the Texas Technological College will be assisted in its continuing development of strong doctoral curricula in fundamental sciences.*

In relationship to this recommendation, consultants offer these comments:

> The consultants reviewed the medical school feasibility study conducted for the Lubbock Chamber of Commerce and Board of City Development by Booz, Allen and Hamilton, Inc., Chicago, Illinois, presented in July, 1966. The consultants agree with the primary conclusion of the report that a Texas Technological College Medical School in Lubbock is feasible. Moreover, the consultants recognize the logic of assigning Lubbock as the site for a future medical school on the basis of geographic considerations within the State of Texas. The consultants believe, however, that a definitive consideration of the development of a new medical school in Lubbock should be postponed for several years. Texas Technological College has not yet achieved the broad and comprehensive university status which is deemed optimal for the establishment of a medical school faculty of a first order quality until the Technological College has achieved additional dimensions and status as a university.

Our consultants do not agree that the preclinical and clinical years of medical education could be geographically separated, but other authorities in Indiana, Illinois, and elsewhere believe differently.

On this point, our consultants write that geographic separation of preclinical and clinical years of medical education "has been attempted but in general is considered to be inadvisable and a compromise." They continue:

> The history of such attempts has generally been that the two-year basic sciences component moves to the location of the last two or clinical years, i.e., the hospital center. The problems appear relative to continuity and flexibility within the medical school curriculum on the one hand, and on the other hand, a need on the part of the faculty to identify themselves as "medical school" faculty. The interaction between the so-called "basic scientist" and the academic clinician with basic science interests forms a vital and stimulating component of modern medical education. In this respect, it is of some interest to note that only three schools have survived as two year schools of the basic medical sciences, and one of these is planning to move to a full four year program, all other two year schools now having become four year schools.

On the other hand, variations of the separation of preclinical and clinical medical education are being explored and given trial. One such plan, for the State of Indiana, is Appendix G to this report. Another such plan, for the State of Illinois, has been proposed this year by the Board of Higher Education in that state. A quotation from the Illinois proposal follows:

> An added dividend of the new curriculum which is proposed, and one which could lead to a broader experience for the student, is the possibility for the student to transfer from one university setting to another. It is conceivable, and in some cases desirable, that a student might take his undergraduate basic sciences under the aegis of one university but might matriculate at a clinical center which is part of another university for his clinical experience.
>
> A further fact which enters into devising a new curriculum is that much of the preparation for medical practice is devoted to the acquisition of clinical skills. The acquisition of these skills occurs largely during the traditional internship and residency programs which now extend anywhere from one to seven years following the receipt of the M. D. degree. Today the vast majority of all physicians elect residency programs beyond the internship year. Moreover, the student is now much more prepared to enter the "supervised practice" of the residency through his direct patient contacts in clinical clerkships in medical school. Both by professional and by educational standards the internship has ceased to have validity as a freestanding year in the continuum of medical education. Since about 50 percent of the residency training now occurs in hospitals with no strong relationship with medical schools, it would seem advisable to include the content of the traditional internship year as part of the undergraduate medical school experience.[3]

The minority is convinced that innovation in the structure and curriculum of medical education is required. It further believes that a carefully designed plan combining the resources of Lubbock, Amarillo, and Midland-Odessa will offer the state an opportunity to test and evaluate, in an area of need, a new and highly promising system of medical education.

8. *State funded associate degree and/or certificate programs in appropriate medical ancillary fields should be promptly developed at several of the urban-based public junior colleges. Suggestions as to type, number and location of such programs should be made to the Coordinating Board by an advisory committee, described in recommendation number 9 below.*
9. *The Coordinating Board should authorize its staff to establish a permanent formally constituted advisory body to develop additional recommendations for medical education and education in the health fields generally, and to aid in continuous planning. Membership on this committee should include representation from the Texas Medical Association, the Texas Dental Association, and other appropriate health professional organizations, as well as from health education itself.*

Such an advisory body is necessary, we believe. Continuous liaison must be provided for between the Coordinating Board and health education. The complexity of programs, the clear public interest in health care, and the elements of controversy in health education proposals all argue for a professional, permanent advisory group, controlled by no single interest. The Committee should report its findings to the Coordinating Board.

10. *The Coordinating Board should adopt as a policy the necessity of recurrent updating of all long-range medical education development plans for each involved institution or system component, and for the state as a whole. This updating process should occur at intervals not longer than five years.*

The minority concludes its report with two statements. The first is a quotation from the report of our consultants: "[we] are hopeful," they write, "that [our] recommendations will facilitate the optimal development of the existing institutions involved in health related education, will promote the growth and qualitative productivity of each, will damage none and will stimulate new developments of exceptional merit and potential." This hope is equally that of the Coordinating Board minority, and we would add only that the goal of our recommendations is to enlarge the scope and quality of medical care available to the people of Texas.

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[3] Board of Higher Education, *Report on Education in the Health Fields for State of Illinois* (February 1968), 44–45.

The second statement is from the March, 1968, joint pronouncement of the American Medical Association and the Association of American Medical Colleges. Calling attention to the "urgent and critical need for more physicians if national expectations for health services are to be realized," the authors note:

> There are both immediate and long-range steps which should be taken. The immediate steps are:
>
> 1. To increase the enrollment of existing medical schools. Considering the time required to create new schools and to provide a student with a medical education, there is no alternative to this step in meeting our present emergency.
> 2. To foster curricular innovations and other changes in the education programs which could shorten the time required for a medical education and minimize the costs. In view of the increasing quality of pre-professional education and the growing competence of entering medical students it should be possible to reduce the length of medical education without sacrificing quality. Also, as the amount of clinical experience provided medical students increases, the duration of internship and residency training should be reassessed. The process of educating a physician embraces the entire curriculum from high school through residency training.
> 3. To meet the need for innovation in educational programs and to encourage diversity in the character and objectives of medical schools. The development of schools of quality where a primary mission is the preparation of able physicians for clinical practice as economically and rapidly as possible is to be encouraged. Such schools may have less emphasis upon fundamental biologic research than is appropriate for a number of other schools.
>
> A longer-range approach to the need for physicians is the development of new medical schools. This approach will not solve our immediate, urgent need for more physicians, but it is essential for meeting the national needs of 1980 and beyond. The contribution of such schools to the total capacity of the medical education system is important. The advantages of the organization of as many such centers of medical education and development through the country as consistent with strong programs should be kept in mind.
>
> To implement the measures enumerated above will require adequate financial support from governmental and various private sources for:
>
> a. Construction of facilities to expand enrollment of existing schools and to create new schools.
>
> b. Support of the operational costs of medical schools.
>
> c. Stimulation and incentive for educational innovation and improvement.
>
> To implement these measures will further require that each medical school and its university re-examine its resources to determine how it can contribute most effectively to the national need for more physicians and what financial help it will need to make this contribution. Also required is understanding by the public, the private foundations, industry, local and state governments, and the national Congress—groups which must provide the financial support which is necessary.

APPENDICES

(Appendices A, B, C, E, F, G, H, and I of the Minority Report Are Identical to Those of the Majority Report.)

APPENDIX D

Proposals From Baylor University College of Medicine

Mr. Victor Brooks
2827 East 18th Street
Austin, Texas

Dear Mr. Brooks:

Mr. Joe L. Allbritton asked that I forward to you the two enclosed Baylor University College of Medicine proposals, one entitled, *Proposals to Increase Medical Education Enrollment Facilities in Texas,* and the other, *Proposal to Establish a Two Year School of Medicine.*

The first proposal was mailed March 15 to Mr. Tom Sealy, at his request, with a copy to Commissioner J. K. Williams. The latter proposal relating to the two year medical school was prepared about one year ago by Dean Schofield and was a small part of the testimony to be given by Baylor officials before the Senate State Affairs Committee.

We thank you for your interest in this most important matter, and please let us know if we can be of further assistance.

Sincerely yours,
Stephen J. Richard

* * *

PROPOSALS TO INCREASE MEDICAL EDUCATION ENROLLMENT FACILITIES IN TEXAS

Prepared by *J. R. Schofield,* M.D.
Dean of Academic Affairs
Baylor University
College of Medicine

Enrollment of Texans in Medical Schools

During the decade 1956–66 the number of Texans newly enrolled in medical studies ranged from 318 to 359 with an average enrollment of 344.

The enrollment of these Texans was typically distributed as follows: *

	Texans	*Total Enrollment*
University of Texas (Galveston)	150	162
University of Texas (Dallas)	103	105
Baylor	35	84
Other Medical Schools in U.S.A.	56	NA

* 1966 data from *JAMA,* November 20, 1967.

In September, 1968, the number will increase from approximately 344 to 394 due to the seating of 50 new students at The University of Texas, San Antonio.

The further increase in size of the San Antonio School to its constructed capacity of 100 students per class would bring the annual enrollment figure of Texans to about 444. This increase likely could be expected by 1970.

Additional increases in the enrollment of Texans can best be handled by expansion of the three older schools, (1) Baylor, (2) University of Texas, Galveston, and (3) University of Texas, Dallas.

Baylor

During its 25 years in Houston, Baylor has developed a rich variety of academic offerings in addition to its education of an annual crop of 80 or more M.D. graduates. In 1967–68 Baylor is providing learning experiences for the following:

Medical Students	343	— 84 M.D. graduates, 1968
Ph.D. Students	80	— 15 Ph.D. graduates, 1968
Interns	80	
Residents	246	
Postdoctoral Fellows	126	

Approximately three million dollars devoted to training programs (NIH support) are producing a flow of highly skilled candidates for faculty positions.

Research expenditures in 1967–68 are estimated to be in excess of fifteen million dollars.

Baylor's salaried faculty consists of the following:

Professors	77
Associate Professors	83
Assistant Professors	172
Instructors & Research Associates	124
Total	456

Baylor Expansion Programs

Having achieved a certain maturity in its total list of training areas, Baylor now proposes to enlarge its enrollment of beginning medical students from 84 to 160, increase its annual input of Ph.D. students from about 24 to 40, and concurrently develop a small school of Hospital and Medical School Administration enrolling 15–20 students annually. *This expansion could be effected at the end of four or five years from the date that the fiscal needs for the new program become available.*

M.D. Expansion Needs:

1. *A new classroom building* approximating the size of the Cullen Building now housing classrooms and professors' offices for 84 students per class in the basic science areas. *This building is estimated to cost about eight million dollars.* New federal legislation may enable a two-thirds matching program with the balance to be derived from private resources.

2. *Additional annual operating expenses in the order of three million dollars.* This amount represents the cost of operation of the new building and the salaries of necessary additions to the faculty and staff of the college.

It is too much to expect the private sector to absorb his sudden increment in Baylor's cost of operation—clearly public funds are needed to solve the crisis in medical education.

The Pennsylvania system of state percapitation payments to private medical colleges could be followed in Texas through direct appropriation or through some system of contract between Baylor and a state agency.

Direct federal aid to medical schools may be available before the Baylor expansion plan is complete.

3. *Additions to the faculty.* Baylor's salaried faculty of 456 persons, supplemented by 900 voluntary teachers, is sufficiently large and well known to attract able and ambitious young graduates of the nation's training programs. Those young people finishing Baylor's large system of advanced training in medicine and the medical sciences would be prime talent for lower rank recruitment in the expanded program. The four to five year building time lag would give Baylor opportunity to engage in selective promotion of medium rank members of the 1967–68 faculty to the more senior positions justified by the expansion program. Thus, relatively few new faculty members from outside will be needed to double Baylor's entering class of medical students.

4. *Clinical facilities now available are sufficient for the pre-M.D. expansion.* Methodist, St. Luke's, Texas Children's, Ben Taub, Jefferson Davis, Veterans' hospitals, and Rehabilitation hospitals are heavily used now for Baylor's responsibilities in the training of interns, residents and postdoctoral fellows. All of these persons would assist the faculty in the instruction of the enlarged M.D. class.

University of Texas Medical Branch, Galveston

Texas' oldest medical school has developed a strong basic science division and an adequate clinical program for M.D. students. Enrollment has been forced upward, however, to the point that clinical facilities may become marginal in the future as Medicare and similar practices force a decline in patient admissions to the school's state hospital. Thus, in the future the school may have to export its students outside Galveston in order to obtain well balanced clinical teaching facilities.

The school in Galveston must depend on clinical facilities in Houston for any possible expansion and possibly its long term survival at its present size of 155 first year students (162 in 1966). Development of clinical clerkships at Hermann Hospital, St. Joseph's Hospital and the Memorial Baptist Hospital System should be encouraged and facilitated. When these developments are complete and additional basic science additions are made, the school should consider enlargement of its entering M.D. class from 155 to 200. This might require five to eight years to accomplish. Such expansion would require adequate financial support from the state.

The University of Texas, Dallas

This comparatively young school has made excellent progress since its founding in 1943. Situated in a large population area (the largest in Texas), it now enrolls 105 new medical students annually and, in addition, has developed large programs to train the intern, resident and fellow. The school, with adequate financial backing, should be ready to expand from 105 to 200 entering students by the middle of the 1970's or a few years later.

Summary of Proposed Expansion Plans and Projected Enrollment (At Entrance)

	Total	Baylor	Texas Galveston	Texas Dallas	Texas San Antonio
1966	356	84	155	105	12*
1968	394	84	155	105	50
1969	394	84	155	105	50
1970	444	84	155	105	100
1971	444	84	155	105	100
1972	444	84	155	105	100
1973	520	160	155	105	100
1974	520	160	155	105	100
1975	520	160	155	105	100
1976	520	160	155	105	100
1977	615	160	155	200	100
1978	615	160	155	200	100
1979	660	160	200	200	100
1980	710	160	200	200	150

* At Galveston and Dallas.

University of Texas, San Antonio

In 1968 this new school will enroll 50 beginning students plus a small number of sophomores and juniors previously enrolled at Galveston and Dallas. Expansion to 100 entering students can be expected by approximately 1970–71, and further expansion to 150 or 200 students can be contemplated by 1978–80.

It would appear that cooperative action involving public and private institutions of high learning, state and federal governments, and private donors could result in an expansion of nearly 100% of enrolling capabilities of M.D. students *without establishment of any new schools.* This 100% increase could be completed in approximately twelve years, with significant increases in entering spaces at intervals of three or four years.

PROPOSAL TO ESTABLISH A TWO YEAR SCHOOL OF MEDICINE

Any effort to develop additional entering spaces for medical students in the State of Texas at this time should include a most careful consideration of a plan to develop a *two year school of the basic medical sciences in Austin, Texas,* in connection with the graduate school of The University of Texas.

This means of adding additional entering spaces for the study of medicine in Texas would be substantially less expensive than the development of a new, free standing school in any other locality.

Recruitment of a faculty in Austin ought to be particularly good if the new medical school matches its academic standards to those of the science departments of the graduate school of The University of Texas. Recruitment of basic medical scientists to work in the new medical school and to collaborate with the scientists of the graduate school of The University of Texas makes a lot of sense and would not be a particularly difficult chore to be performed by the dean of the new school.

New faculty members agree to change their working situation if the attraction includes an active climate of scholarly study and research. The chart below shows that in the 1965–66 period The University of Texas, Austin, attracted from the United States Public Health Service alone nearly $2,000,000.00 in research grants and $783,000.00 in research training grants. Unquestionably, there were additional sources for grant funds to The University of Texas in Austin, but since the Public Health Service interests itself in medically related research projects, it can be assumed that the science departments in Austin have developed a strong equity in biological and health related scientific research. Indeed, the amounts cited above are almost equivalent to similar amounts granted by the Public Health Service to the Medical Branch of The University of Texas in Galveston.

It is to be repeated that the Public Health Service is not the only source of grants for any institution and that there must be a number of other sources available to the researchers in both Galveston and Austin.

A school of basic sciences in Austin would come close to meeting the ideal, i.e., the establishment of a medical school in close relationship to the full University. Nowhere else in Texas is a medical school situated in immediate proximity in relationship to the main campus of its parent university.

It is proposed that the school of this character be developed in Austin with the capability of enrolling 100 students per year. After completion of two years of study in this school in Austin, the students could be transferred to the other existing institutions in San Antonio, Galveston, Dallas, and Houston, as well as to other four year medical schools throughout the country. Attrition in the other schools will make available a number of spaces for these transfer students; the assumed high quality of their educational experience in Austin could serve as a check and control against the activity in the other institutions, both public and private, in the State of Texas.

Research and Training Grants from the United States Public Health Service
July 1, 1965–June 30, 1966

	RESEARCH		TRAINING	
	Number of Grants	Amount	Number of Grants	Amount
Baylor	96	$6,537,532	39	$2,060,804
University of Texas Medical Branch	64	1,904,015	24	893,038
Southwestern Medical School—Dallas	74	2,456,503	27	1,188,454
University of Texas—Austin	57	1,936,955	18	783,261

Attrition throughout the country annually makes available some 900 empty seats in the third year of the study of medicine. There is no way to fill these empty places in the third year except by the development of additional two year medical schools.

A very large national private foundation has in the past awarded a substantial sum of money to any university which would develop a two year school of medicine. No doubt this grant could be applied for and received should this plan be adopted.

The annual operating budget of a two year school of the basic medical sciences for an entering class size of 100 would be in the order of two to two and one-half million dollars maximally. The physical facilities needed for such a school would not be nearly so massive as are expected of a fully developed four year free standing college of medicine. Clinical supporting faculty and hospital facilities for the new school could be arranged without major difficulty in Austin.